



2008 13th Expeditionary Warfare Conference
“21st Century Expeditionary Warfare-Challenges, Opportunities and the New Maritime Strategy”
Panama City, FL

20 - 23 October 2008

Onsite Agenda

NDIA Expeditionary Warfare Division (EWD) Organization Chart

Tuesday, 21 October 2008

Welcome and Opening Remarks: CAPT Andrew Buduo III, Commander

Featured Speaker

Lieutenant General George J. Flynn, USMC

Commandant of the Marine Corps Representative, Deputy Commandant for Combat Development and Integration

Mr. Roger Smith

Deputy Assistant Secretary of the Navy- Expeditionary Warfare

Mr. Eric Casey

Maersk Line, Ltd. “Global Solutions in the 21st Century- the Defense/Commercial Partnership”

Combined Panel: Shipbuilding Requirements/Capabilities and Industry

Panel Members:

- Dr. John Pazik, Director of Ship Systems and Engineering, Office of Naval Research
- “The Ship Acquisition Process Status and Opportunities”, Mr. Art Divens, Program Executive Office, Ships
- “Marine Corps Shipbuilding Requirements”, BGen Walter L. Miller, USMC, Assistant Deputy Commandant, Combat Development and Integration, HQ USMC
- Mr. Michael Toner, Executive Vice President – Marine Systems, General Dynamics, Inc.

Wednesday, 22 October 2008

Marine Corps Strategy for the Long War

Brigadier General Ronald Johnson, USMC, Director, Operations Division, PP&O, HQMC

Marine Corps Aviation in Support of the Long War

Brigadier General Jon Davis, USMC, Deputy Assistant Commandant Aviation, HQMC

MPF Support at the Blount Island Command

Colonel Joe Haviland, USMC

Commander, Blount Island Command

Ground Equipment Requirements

LT Col Ben Garza

PEO, Land Systems, Marine Corps Systems Command

Enhanced Company Operations Concept

Colonel Vince Goulding, USMC (Ret)

Director, Experiment Division, Marine Corps Warfighting Laboratory

Colonel Stuart Dickey, USMC

Commanding Officer, Expeditionary Warfare Training Group, Atlantic – “Revitalizing Amphibious Warfare Capabilities”

The Long War- Strategy to Hardware (USN Focus)

Panel Members:

- Rear Admiral Michael McDevitt, USN (Ret), Director, Center for Strategic Studies Center for Naval Analyses

Panel Members:

- [Mr. George Solhan](#), Deputy Chief of Naval Research, Expeditionary Maneuver Warfare and Combating Terrorism
- [Captain Gilmore Briklund](#), USN, Chief of Staff, Expeditionary Strike Group TWO

[NECC Battlespace](#)

Thursday, 23 October 2008

Keynote Speaker

- [Major General Thomas Benes](#), USMC Director Expeditionary Warfare Division, OPNAV (N85)

Moderator:

Major General Gordon Nash, USMC (Ret)
Corporate Vice President of EW and Vice President Washington D.C. Operations, Sierra Nevada Corporation

Panel Members

- CAPT Mark Mullins, USN, OPNAV N851 (Special Warfare)

Panel Members:

- [CAPT Mark Mullins](#), USN, OPNAV N851 (Special Warfare)
- CAPT Edward Barfield, USN, OPNAV N853
- [CAPT Barry Coceano](#), USN, OPNAV N857 (EOD/NCW)
- [Mr. Kevin McConnell](#), Director, Fires & Maneuver Integration Division, MCC

13TH ANNUAL EXPEDITIONARY WARFARE CONFERENCE



*21st Century Expeditionary Warfare-
Challenges, Opportunities and the New
Maritime Strategy*

ON-SITE AGENDA



OCTOBER 20-23, 2008

WWW.NDIA.ORG/MEETINGS/9700

MARRIOTT BAYPOINT RESORT ► PANAMA CITY, FLORIDA

EVENT #9700

AGENDA

MONDAY, OCTOBER 20, 2008

- 7:00 AM** **Registration Open at the Nicklaus Design Golf Course**
- 8:00 AM** **Golf Tournament at Nicklaus Design Golf Course**
- 3:00-4:30 PM** **Spouse Tea**
- 6:00-7:00 PM** **Registration and Reception**
- 7:00 PM** **Dinner- Keynote Speaker**
General James Jones, Jr., USMC (Ret)
President and Chief Executive Officer of the U.S. Chamber Institute for 21st Century Energy; Former Commandant of the Marine Corps

TUESDAY, OCTOBER 21, 2008

- 6:30-7:30 AM** **Registration and Continental Breakfast**
- 7:30-8:00 AM** **Welcome and Opening Remarks**
- 8:00-8:45 AM** **Featured Speaker**
Vice Admiral Barry McCullough, III, USN
Chief of Naval Operations Representative, Deputy CNO for Integration of Capabilities and Resources (N8)
- 8:45-9:30 AM** **Featured Speaker**
Lieutenant General George J. Flynn, USMC
Commandant of the Marine Corps Representative, Deputy Commandant for Combat Development and Integration
- 9:30-10:00 AM** **Break**
- 10:00-10:45 AM** **Mr. Roger Smith**
Deputy Assistant Secretary of the Navy- Expeditionary Warfare
- 10:45-11:30 AM** **Mr. Eric Casey**
Maersk Line, Ltd. "Global Solutions in the 21st Century- the Defense/Commercial Partnership"
- 11:30-12:45 PM** **Networking Lunch**
- 12:45-2:45 PM** **Shipbuilding Requirements/Capabilities and Industry Combined Panel**

Requirements Session Co-Chairman: Rear Admiral Bill Fogarty, USN (Ret), *Senior Naval Advisor, BAE Systems, Land & Armaments*
Session Focus: The CNO's Shipbuilding Plan, coupled with the new Maritime Strategy, present some daunting issues and challenges to DON Resource Sponsors and Program Executives. Some examples are: "Do the warfare requirements/capabilities needed to carry out the Maritime Strategy match the shipbuilding plans?"; "Are capability trade-offs being mandated by budget realities which give the warfighter enough 'bang for the buck'?"

Industry Session Co-Chairman: Mr. Terry O'Brien, *Corporate Director, Navy Amphibious Programs, Northrop Grumman Corporation*
Session Focus: Shipbuilding is a National Security issue that is complicated and complex and is at the forefront of Navy Force Structure discussions. Every year when delivered to Congress, The Navy's 30 Year Shipbuilding Plan has been a point of discussion with the Congress, Department of Defense and Industry and is always heavily scrutinized and commented upon. This session will

focus on an open discussion with the Navy (customer) and the Shipbuilders to present both sides of shipbuilding. The panel consisting of DASN Ships and two leaders in Expeditionary Shipbuilding will present short remarks followed by an interactive panel of the customer and industry.

Moderator:

Vice Admiral Doug Katz, USN (Ret)

BAE Systems, Land and Armaments

Panel Members:

- Dr. John Pazik
Director of Ship Systems and Engineering, Office of Naval Research
- Rear Admiral William Landay, III, USN
PEO SHIPS
- OPNAV N8 Speaker TBD
- Brigadier General Ronald Johnson, USMC
Director, Operations Division, PP&O, HQMC

2:45-3:15 PM

Break

3:15-5:15 PM

Industry Panel Moderator:

Mr. Terry O'Brien

Corporate Director, Navy Amphibious Programs, Northrop Grumman Corporation

Panel Members:

- Ms. Allison Stiller
Deputy Assistant Secretary of the Navy (Research, Development and Acquisition), Ship Programs
- Mr. Michael Petters
Corporate Vice President and President, Northrop Grumman Shipbuilding
- Mr. Michael Toner
Executive Vice President – Marine Systems, General Dynamics, Inc.

WEDNESDAY, OCTOBER 22, 2008

6:30-7:30 AM

Registration and Continental Breakfast

7:30-11:45 AM

The Long War- Strategy to Concepts to Hardware (USMC Focus)

Session Chairman: Major General Harry Jenkins, USMC (Ret), *President, Soaring Eagle Consulting*

Session Focus: The future global threat environment will be characterized by terrorism, irregular warfare, religious extremism, ungoverned territories, and the competition for natural resources (water, energy, etc.). The Marine Corps will remain a general purpose force capable of full spectrum operations against conventional threats but with emphasis on irregular warfare. The Corps is adopting strategies and adjusting concepts and plans to meet future Long War demands through persistent forward presence, security cooperation and engagement in support of Regional Combatant Commanders theater security cooperation plans. This session will include presentations on strategy and unit regional orientation, aviation and ground equipment requirements, MPF support at the Blount Island Command and an emerging Enhanced Company Operations Concept at the Marine Corps Warfighting Laboratory.

7:30-8:30 AM

Marine Corps Strategy for the Long War

Brigadier General Ronald Johnson, USMC

Director, Operations Division, PP&O, HQMC

8:30-9:15 AM

Marine Corps Aviation in Support of the Long War

Brigadier General Jon Davis, USMC

Deputy Assistant Commandant Aviation, HQMC

9:15-9:45 AM

Break

- 9:45-10:30 AM** **MPF Support at the Blount Island Command**
Colonel Joe Haviland, USMC
Commander, Blount Island Command
- 10:30-11:15 AM** **Ground Equipment Requirements**
PEO, Land Systems, Marine Corps Systems Command (Invited)
- 11:15-11:45 AM** **Enhanced Company Operations Concept**
Colonel Vince Goulding, USMC (Ret)
Director, Experiment Division, Marine Corps Warfighting Laboratory
- 12:00-1:30 PM** **Colonel Stuart Dickey, USMC**
Commanding Officer, Expeditionary Warfare Training Group, Atlantic – “Revitalizing Amphibious Warfare Capabilities”
- 1:30-3:30 PM** **The Long War- Strategy to Hardware (USN Focus)**

Session Chairman: Mr. Richard Diamond, *Strategic Assessments, Seapower Capabilities Center, Raytheon Corporation*

Session Focus: No matter the outcomes in Iraq and Afghanistan, the nation will inevitably turn once again to the expeditionary capabilities of naval forces as national security instruments of choice. Much of the burden of forestalling crisis will fall to naval expeditionary forces by maintaining persistent forward presence, ensuring cooperation by expanding global maritime security collaboration and successfully projecting decisive U.S. military power when preventative measures fail. This panel will examine issues along the gamut of naval expeditionary considerations, from high-end/concept perspective, to that of non-ACAT I acquisition programs, to NECC early lessons learned and industry opportunities, to recent operational lessons learned.

- 1:30-3:00 PM** **Moderator:**
Mr. Richard Diamond
Strategic Assessments, Seapower Capabilities Center, Raytheon Corporation
- Panel Members:**
- Rear Admiral Michael McDevitt, USN (Ret)
Director, Center for Strategic Studies, Center for Naval Analyses
 - Captain David Balk, USN
Assistant Chief of Staff (Operations), Naval Expeditionary Combat Command

3:00-3:30 PM **Break**

- 3:30-4:45 PM** **Panel Members:**
- Mr. George Solhan
Deputy Chief of Naval Research, Expeditionary Maneuver Warfare and Combating Terrorism
 - Captain Gilmore Briklund, USN
Chief of Staff, Expeditionary Strike Group TWO

5:00-7:00 PM **NSWC PCD Open House and Networking Reception**

7:00-10:00 PM **Pig Roast at NSWC PCD**

THURSDAY, OCTOBER 23, 2008

7:00-7:45 AM **Registration and Continental Breakfast**

8:00-12:00 PM **Bringing Expeditionary Warfare into the 21st Century**

Session Chairman: Mr. Skip Gaskill, *Director, Marine Corps Programs, Textron Corporation*

Session Focus: As we continue to fight stability operations overseas and plan for enduring missions beyond that, we face enormous challenges in preparing for the future. The inevitability of a constrained fiscal environment will have a major impact in the

decisions made to provide us with the capabilities to accomplish our stated tasks. The need for innovative, economical and sustainable weapons and systems are crucial to this mission success.

8:00-8:45 AM

Keynote Speaker

Major General Thomas Benes, USMC

Director Expeditionary Warfare Division, OPNAV (N85)

8:45-9:30 AM

Moderator:

Major General Gordon Nash, USMC (Ret)

Corporate Vice President of EW and Vice President Washington D.C. Operations, Sierra Nevada Corporation

Panel Members:

- CAPT Mark Mullins, USN
OPNAV N851 (Special Warfare)
- CDR Dave Hebert, USN
OPNAV N852 (Mine Warfare)

9:30-10:00 AM

Break

10:00-12:00 PM

Panel Members:

- CAPT Edward Barfield, USN
OPNAV N853 (Amphibious Warfare)
- CAPT Barry Coccano, USN
OPNAV N857 (EOD/NCW)
- Mr. Kevin McConnell
Director, Fires & Maneuver Integration Division, MCCDC

12:00-12:05 PM

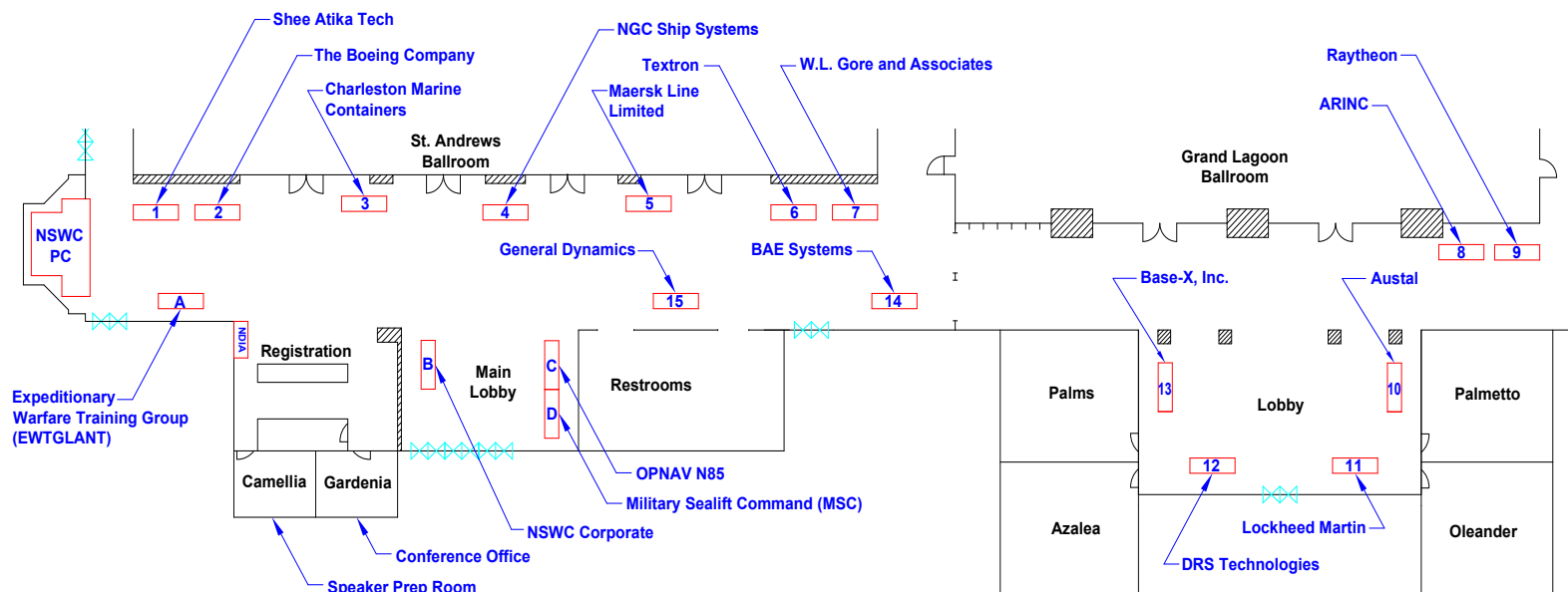
Conference Close

12:10 PM

Lunch

ADJOURN UNTIL OCTOBER 19-22, 2009

DISPLAY LAYOUT



Company	Booth Number
Shee Atika Technologies	1
The Boeing Company	2
Charleston Marine Container	3
Northrop Grumman Ship Systems	4
Maersk Line Limited	5
Textron	6
W.L. Gore and Associates	7
ARINC	8
Raytheon Corporation	9
Austal	10
Lockheed Martin Corporation	11
DRS Technologies	12
Base-X, Inc.	13
BAE Systems	14
General Dynamics	15
EWTGLANT	A
NSWC Corporate	B
OPNAV N85	C
Military Sealift Command	D

AUSTAL

Austal's US shipyard occupies approximately 134 acres and is located in Mobile, Alabama, on the Mobile River. The shipyard waterfront is approximately 20 miles from the open Gulf.

The original assembly bay (90ft x 360ft) is capable of aluminum ship construction up to 80ft wide, 74ft high and 350ft long. The facility provides for construction material storage, fabrication and hull erection floor space. The existing 380ft wharf is connected to the building by a 65ft-long concrete launch pad. Ship launch is accomplished by transferring the ship from keel blocks to transfer cars, rolling the ship out of the building on a removable track system onto a launch barge or drydock, and subsequently flooding the barge or drydock for ship float-off.

The Northern Expansion facility was completed in November 2005. This expansion adds two large (134ft x 400ft) buildings for module fabrication/erection and component storage, connected by 2 mezzanine levels (25ft x 400ft) for shop space, material storage, and small assembly fabrication; two additional launch pads; a combined wharf length of 750ft; and additional overhead cranes capable of lifting 40-ton modules.

In July 2008, Austal broke ground on a new 700,000sf modular manufacturing facility. This project will include an 80,000sf warehouse and 60,000sf office building. Completion of this project should enable the shipyard to double its shipyard staff to over 2,000 employees and will speed up the shipbuilding process increasing the yard's annual product output.

Austal is currently preparing the U.S. Navy's Littoral Combat Ship (LCS 2) for sea trials. The LCS 2 sea frame is based on Austal's innovative 127-meter high-speed aluminum trimaran hullform that enables the ship to reach sustainable speeds of over 40 knots and range in excess of 3,500 nautical miles, with an unmatched interior volume and payload for a vessel of this size.

Austal is preparing the second of two 107-meter Hawaii Superferries for delivery in December. Hawaii Superferry is using Austal fast-ferry technology to establish Hawaii's first high-speed vehicle-passenger service. Each catamaran can carry 866 passengers and up to 282 cars.

BAE SYSTEMS

BAE Systems mark is "We Protect Those Who Protect Us"! BAE Systems plc is the 3rd largest global defense company with 97,500 employees and \$31.4B annual sales. It is the top-ten U.S. prime contractor with presence in more than 100 nations. The US based operations have major operations in 38 states, the UK, Sweden, Israel, Germany, Mexico, Switzerland, and South Africa and a U.S. company chartered in Delaware.

There are three key operating groups; Electronics, Intelligence & Support (EI&S) Operating Group designs, develops and manufactures a wide range of electronic systems and subsystems for both military and commercial applications; to include Electronic Warfare. EI&S is a leading provider of integrated technical and professional service solutions for the U.S. national security and Federal civilian markets; to include Ship Repair. Land and Armaments is a global leader in the



ADMINISTRATIVE INFORMATION

For questions regarding attendee participation at this conference, please contact Claudia Diaz, Meeting Planner, at (703) 247-2596 or cdiaz@ndia.org.

CONFERENCE PROCEEDINGS

Proceedings will be made available to conference attendees one to two weeks after the conference via DTIC link. You will receive notification via e-mail once proceedings are available for viewing.

ID BADGES

During conference registration and check-in, each attendee will be issued an identification badge. Please be prepared to present a valid picture ID. Badges must be worn at all conference functions.

design, development, production and service of armored combat vehicles, naval guns and launchers, canisters, artillery systems & intelligent munitions as well as individual and vehicle protective systems; to include Naval Guns and launchers and the Bradley Combat System. In addition, in keeping with protecting those that protect us, BAE Systems recently established a Products Group which is rapidly becoming the single-source provider of security solutions, manufacturing many of the world's most recognized brands exclusively for law enforcement, corrections, military and licensed security professionals.

BAE Systems continues to be involved in the community; America Supports You, ESGR, Armed Service YMCA, The Fisher House, Operation Homefront, USO, American Red Cross, Special Olympics and many more.

BAE Systems has a solid financial performance and reputation for program performance. A leader in science, technology and engineering and continues to have dramatic growth and investment in jobs, facilities and technology. BAE Systems has skilled and innovative people, dedicated to national security and supporting the men and women in uniform and a commitment to ethics and integrity in everything we say and do.

DRS SONAR SYSTEMS

DRS Sonar Systems, a joint venture between DRS Technologies and Thales North America, develops undersea warfare systems (UWS) for the defense and homeland security markets.

Majority owned by DRS, the joint venture company combines forces of two leading global defense technology companies. The company offers attractive and affordable undersea warfare solutions based on the leading-edge technologies of Thales and the world-class manufacturing and integration capabilities of DRS.

Formed in spring of 2007, the company is increasingly seen as a preferred provider of sonar, anti-submarine and mine warfare solutions for U.S. and non-U.S. military and homeland security applications.

DRS Sonar Systems will manufacture undersea warfare products and systems under license from Thales and serve as the point of contact for sales and support in the United States. The new company also will develop new underwater systems tailored to U.S. Navy requirements by integrating subsystems from other contractors and Thales's extensive product base.

DRS Sonar Systems is headquartered in Gaithersburg MD and is headed by Benajmin Teno, President. Telephone: 301 921-8015.

The company's parent organization, DRS C3 Systems, is a world leader in the development and production of naval display consoles, ship communication systems, radar and electronic manufacturing and integration services.

Thales is a leading international electronics and systems group, serving defense, aerospace and security markets worldwide, and supported by a comprehensive services offering. The company's civil and military technology businesses develop in parallel to serve a single objective: the security of people, property and nations. Thales employs approximately 68,000 people.

DRS Technologies, headquartered in Parsippany, New Jersey, is a leading supplier of integrated products, services and support to military forces, intelligence agencies and prime contractors worldwide. The company employs approximately 10,500 people. For more information about DRS Technologies, please visit the company's web site at www.drs.com.

GENERAL DYNAMICS ELECTRIC BOAT

With more than a century of experience, Electric Boat has established standards of excellence in design, construction and lifecycle support of submarines for the U.S. Navy, with a shipyard in Groton, CT, and a manufacturing facility in Quonset Point, RI.

New submarine construction currently is focused on the Virginia class, representing a revolution in design and construction techniques and mission flexibility. The first U.S. Navy warship designed from the keel up for the post-Cold War era, Virginia has been optimized for maximum flexibility, these submarines will play a key role in the nation's defense with their stealth, firepower and unlimited endurance.

Electric Boat is co-producing the first 10 ships of the class, and delivered the lead ship, Virginia, in 2004. Four other ships of the class have been delivered since, the latest being the New Hampshire, eight months ahead of schedule and \$66 million under target cost.

Electric Boat's engineering and design organization embodies a broad set of skills and capabilities, including nuclear marine propulsion, hydrodynamics, acoustics, and shock and structure. At the heart of these skills and capabilities is Design/Build. Teams of Navy personnel, vendors and Electric Boat engineers, designers and waterfront construction supervisors collaborate on design and manufacturing issues, supported by advanced computer technology that enables team members to view three-dimensional digital drawings of individual components, systems or the entire submarine.

Working closely with the U.S. Navy, Electric Boat is committed to helping keep the nation's nuclear submarine fleet mission-ready by providing a range of maintenance, modernization and life-cycle support activities. Hundreds of employees are regularly engaged in this work at various locations across the United States.

Electric Boat has finished conversion of four Ohio-class submarines to an SSGN configuration, providing significant new capability to the fleet. It is a key player in the Tango Bravo program, developing breakthrough technologies such as shaftless propulsion and electrification of major systems. It is advancing concepts for a very high speed, manned submersible, and engaged in concept studies for the next-generation submarine. Electric Boat is the logical choice for designing and building the Navy's undersea force of the future.

RAYTHEON COMPANY

Raytheon Company, with 2007 sales of \$21.3 billion, is a technology leader specializing in defense, homeland security and other government markets throughout the world. With a history of innovation spanning more than 86 years, Raytheon provides state-of-the-art electronics, mission systems integration and other capabilities in the areas of sensing; effects; and command, control, communications and intelligence systems, as well as a broad range of mission support services. With headquarters in Waltham, Mass., Raytheon employs 72,000 people worldwide.

SAIC

SAIC is a FORTUNE 500® scientific, engineering, and technology applications company that uses its deep domain knowledge to solve problems of vital importance to the nation and the world, in national security, energy and the environment, critical infrastructure, and health. The company's approximately 44,000 employees serve customers in the Department of Defense, the intelligence community, the U.S. Department of Homeland Security, other U.S. Government civil agencies and selected commercial markets. SAIC had annual revenues of \$8.9 billion for its fiscal year ended January 31, 2008. For more information, visit www.saic.com. SAIC: From Science to Solutions®



N85

Expeditionary Warfare Division

Naval Expeditionary Warfare in the 21st Century

**MajGen Thomas Benes, USMC
Director, Expeditionary Warfare Division, N85**

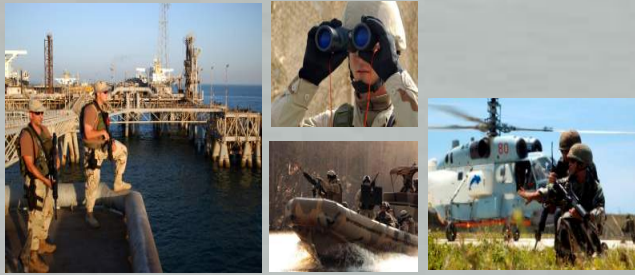
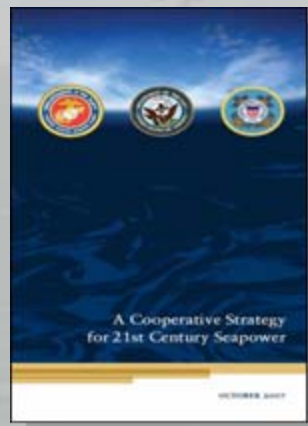


Maritime Strategy—Execution 2008



Growing Demand for Expeditionary Forces

- Forward Deployed Naval Forces
- GFS Operations
- MARSEC Operations
- Humanitarian/Disaster Relief





Amphibious Force Development



Assault Echelon Long Range Plan: 33-34 Ships

- (3) LHA(R)—New Construction
- (8) LHD—ESL 2038
- (11) LPD-17—9 Under Contract
- (12) LSD-41—ESL 2035
- LSD Replacement—2018
- LHD Replacement—2023

A flexible, balanced Expeditionary Force to meet warfare demands

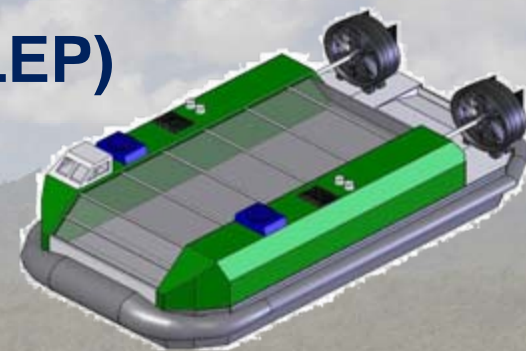




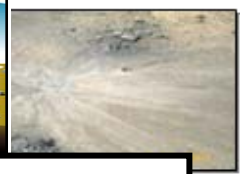
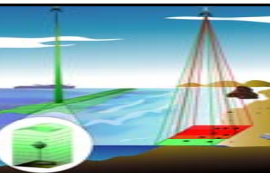
Connectors



- Joint High Speed Vessel (JHSV)
- Landing Craft Air Cushion (LCAC) / (SLEP)
- Sea Base to Shore Connector
- Landing Craft Utility (LCU)
- T-CRAFT S&T Initiative



Minefield Detection and Neutralization



Assault Breaching System



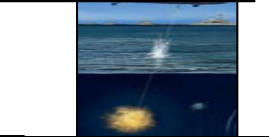
EOD Mobile Unit One

Laser (Hunt)




Airborne Laser Mine Detection System

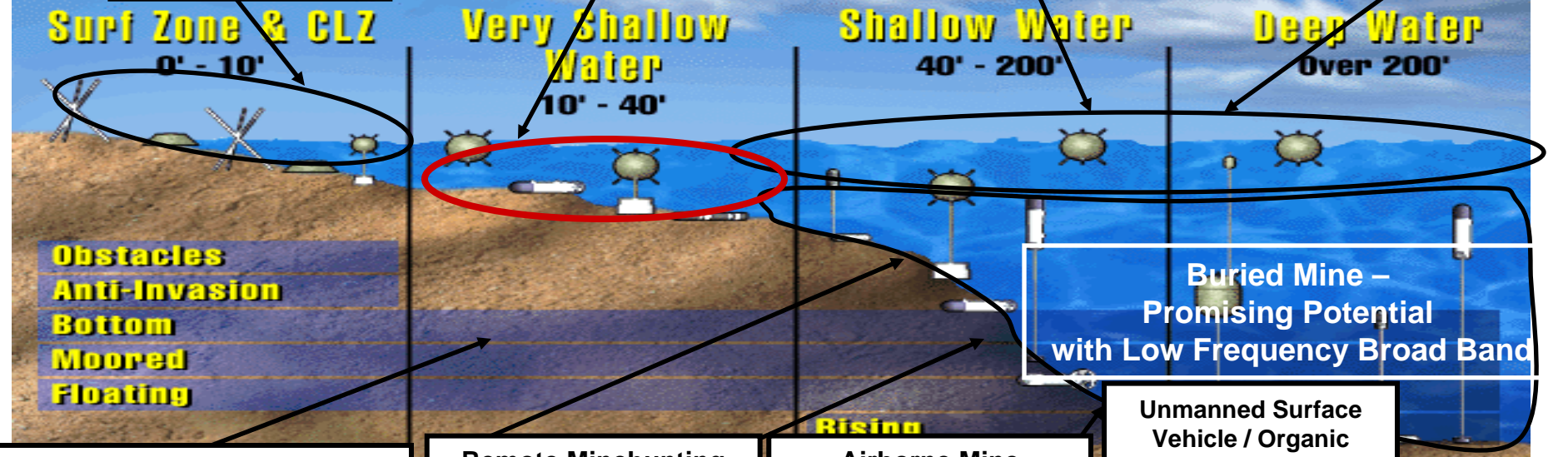
Super-cavitating Projectiles (Kill)



Rapid Airborne Mine Clearance System



Littoral Combat Ship



Surface Mine Countermeasures
Unmanned Underwater Vehicle
and Low Frequency Broadband



Buried Mine Detection

Remote Minehunting System – AN/AQS-20A



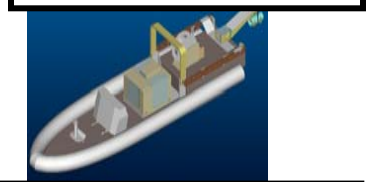
Sonar (Hunt)

Airborne Mine Neutralization System



Self propelled explosive charges (Kill)

Unmanned Surface Vehicle / Organic Airborne and Surface Influence Sweep



Magnetic Acoustic Influence Sweep



NECC / NSW / NSFS



Contingency Construction

- **NECC Modernization—C4ISR, NLW**
- **NSW—Equipment Upgrades, ISR**
- **Naval Surface Fire Support—ERM AOA**
- **Green Water—Capability Development**

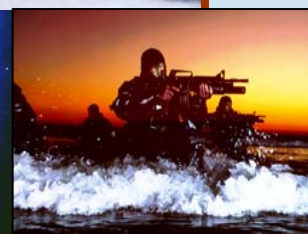
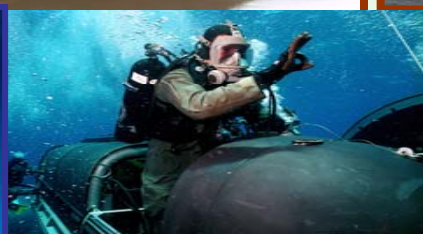
Riverine Assault Boat



Riverine Command Boat



Riverine Patrol Boat





Maritime Prepositioning Force



2 T-
LHA(R)



3
MLP



1 T-
LHD



3 T-
AKE



3 T-
AKR

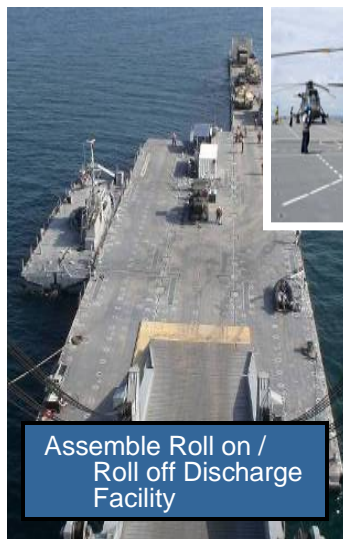


2
Legacy
T-AK



Maritime Prepositioning Force (Future):

- Close joint forces to the sea base
- Arrival and assembly at sea
 - Integration of personnel and equipment
 - Vehicle and equipment transfer
- Employment of “combat ready” forces from Over-the-Horizon
 - Surface
 - Vertical
- Sustainment of Joint forces ashore
 - Delivered via vertical connectors from T-AKE
 - Delivered via surface connectors from MLP
 - TEU handling at sea and throughput to shore
- Reconstitution and redeployment of forces





Questions?



Bringing Expeditionary Warfare into the 21st Century



Blue vs. **Green**

Or

Blue in Support of **Green**



N-85 Toughest Job in the Navy,
Marines, DoD

**The way ahead for the nation's
only true expeditionary forces.**

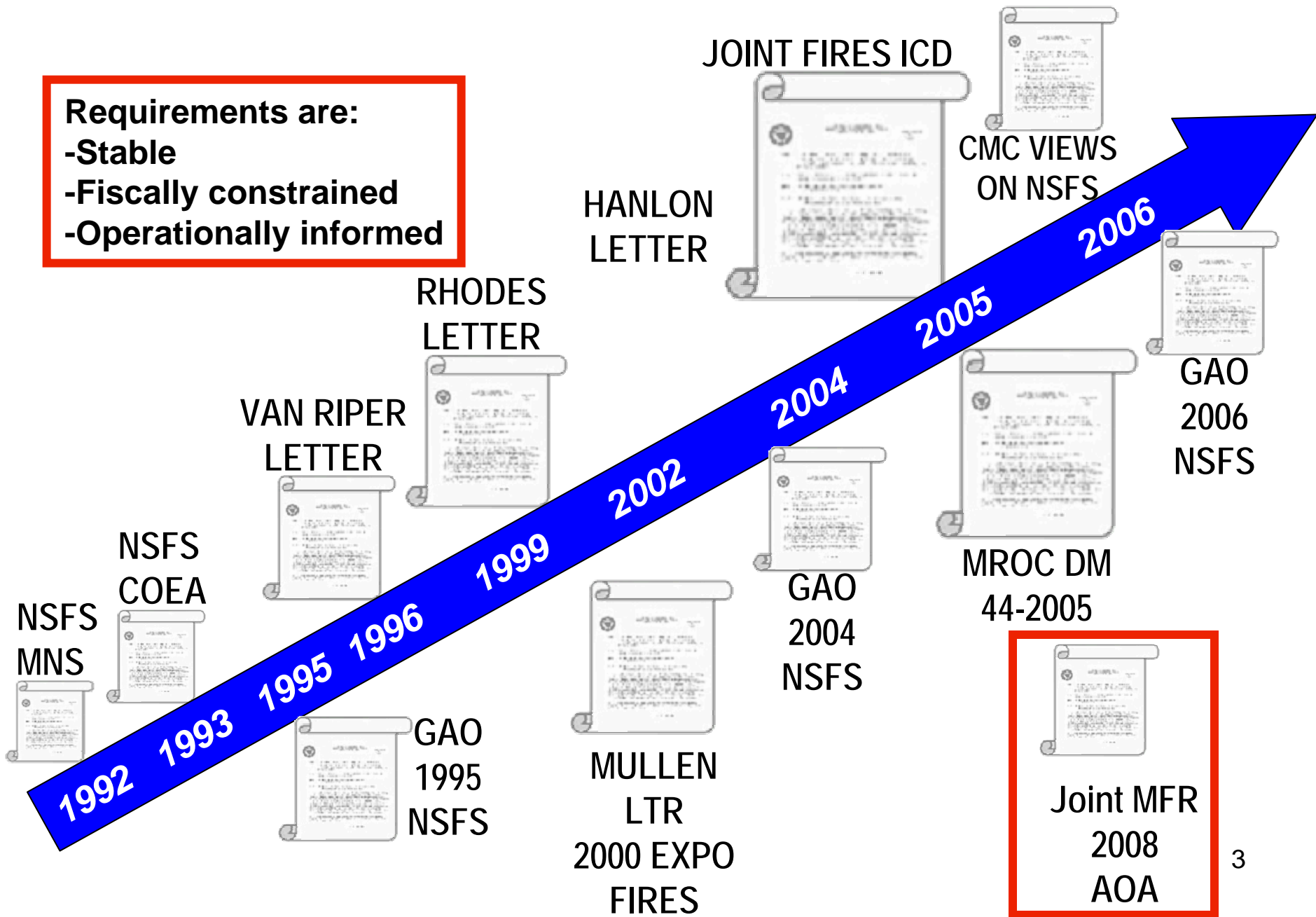
Hardest Duty in Dept of the Navy



USMC NSFS Requirements Pedigree

Requirements are:

- Stable
- Fiscally constrained
- Operationally informed



Bringing Expeditionary Warfare into the 21st Century

- **Capt Mark Mullins, USN
OPNAV N851 (Special Warfare)**
- **Cdr Dave Hebert, USN
OPNAV N852 (Mine Warfare)**

Break

- **Capt Ed Barfield, USN
OPNAV N853 (Amphibious Warfare)**
- **Capt Barry Coceano, USN
OPNAV N857 (EOD/NCW)**
- **Mr. Kevin McConnell
Director, Fires and Maneuver Integration Division, MCCDC**
- **Questions / Comments**



Team N-85 / MCCDC



All commissioned Naval Service Officers.
All have masters degrees.
All served on high level staffs.
All served as commanders.
All combat veterans.
All with multiple awards.
Most have extensive Joint experience.

Bringing Expeditionary Warfare into the 21st Century

Rules of Engagement

- **15 – 20 Min per speaker X 2**
- **@ 0930 Break for 30 Minutes**
- **15-20 Min per speaker X 3**
- **Questions / Comments**
- **1210 Lunch**

- **Cell phone ring costs a donation to N-MC Relief!**
- **I am the judge, timer, and gonger.**

Why We Need to Deliver





Naval Special Warfare

Navy Component of USSSOCOM

Operational Focus – Direct Action & Special Reconnaissance
But...

Capable of engaging across the spectrum of Special Operations
"PEOPLE ARE OUR GREATEST ASSET!"

Mobility is a cornerstone operational attribute
(In, on & under the Sea; in the Air; on Land)

Task-organized





Naval Special Warfare

Current Service Common Capabilities

Small Arms and Weapons Mounts

Night Vision Equipment

Training Support Craft

Pre-positioned Operational Stocks

(Expeditionary camp sets)

Portable Recompression Chambers



Possible Future (Navy) Service Common Capabilities

Replacement Riverine Craft

NSW version of a "Green Water Craft"

Tactical Vehicles

Tactical Communications Equipment

(A current N6 responsibility)

Small Tactical Unmanned Aircraft Systems



Riverine Component of NECC

Initial Outfitting

Riverine Combatant Craft

Tactical/Support Vehicles

Small Arms/Weapons Mounts

Tactical Communications/Electronics

Expeditionary Camp Sets

Night Vision Equipment



Planned Future Capability Improvements

Tier I Unmanned Aircraft System

Riverine Unmanned Surface Vessel

Unattended Ground Sensors

U.S. Navy Mine Countermeasures

**National Defense Industrial Association
13th Expeditionary Warfare Conference
October 2008**



*CDR Dave Hebert
Mine Warfare Branch Head (N852)*



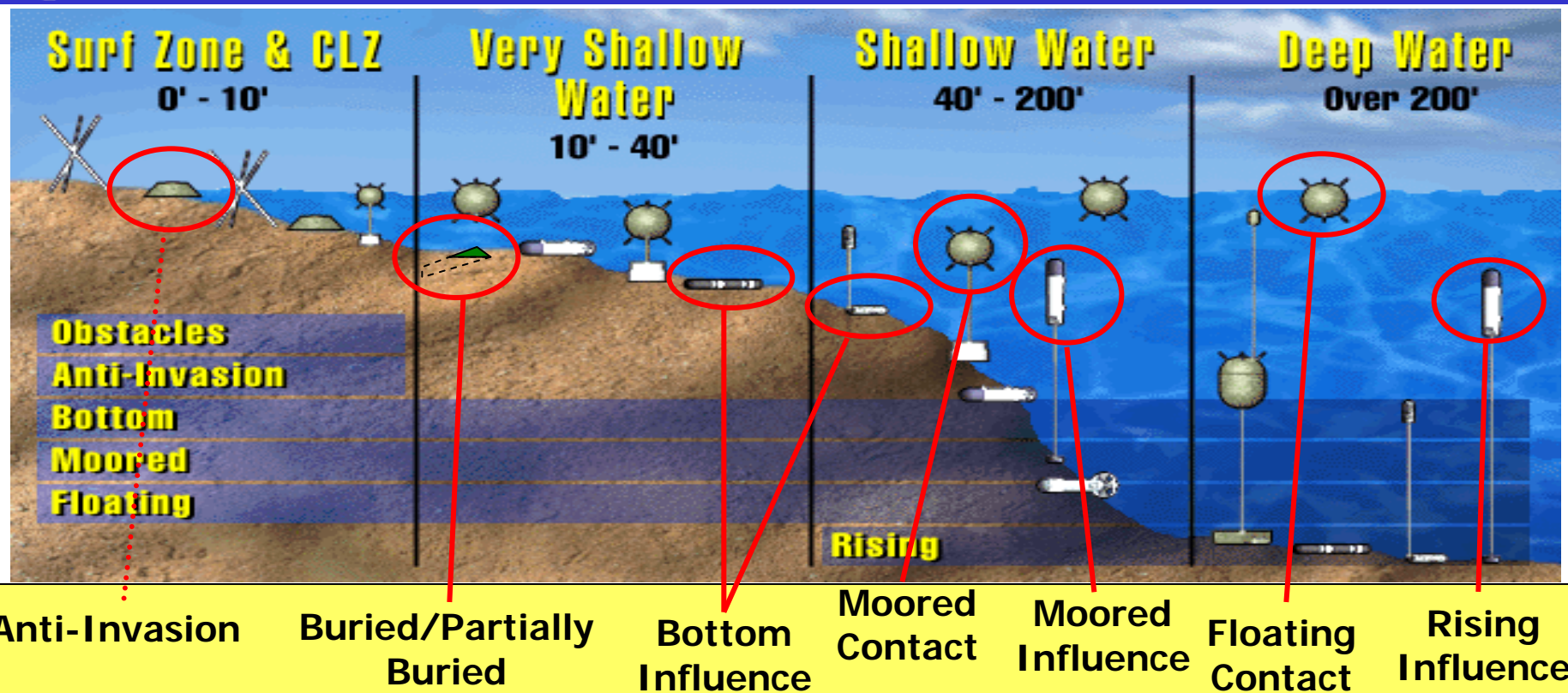
Agenda



- **Mine Threat**
- **The Transition Challenge**
- **MCM Mission Package Program Overview**
- **OMCM Challenges**
- **Summary**



The Threat Across the Littorals



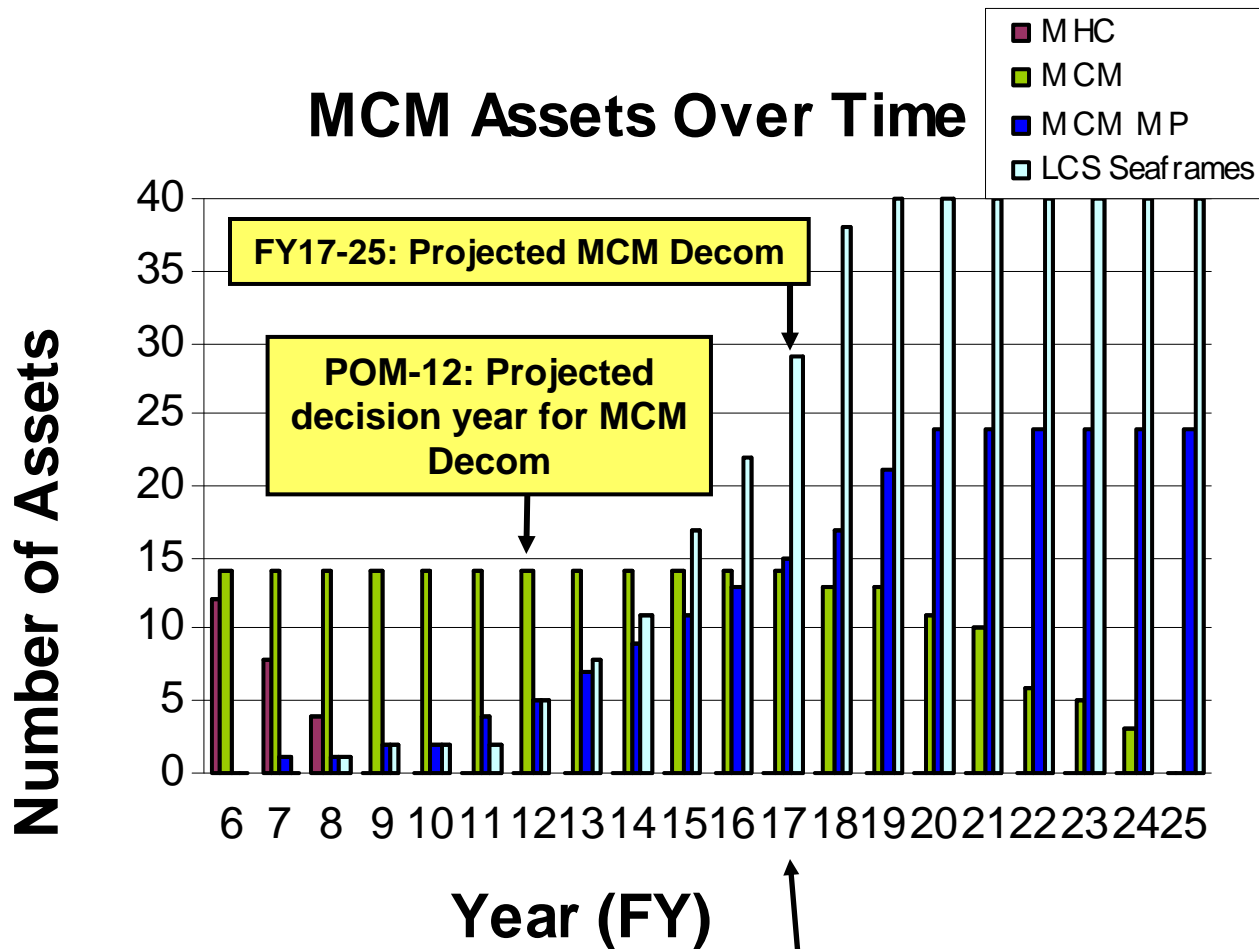
- The real goal of a minefield is Sea Denial, NOT the damage or destruction of a specific ship.
- Navy goal is Assured Access to defeat the minefield, NOT counter every mine.



- Over 300 Mine Types
- Over 50 Countries Possess
- Low Cost
- Simple to Deploy



The Organic Transition Challenge





Coverage Complete

Minefield Detection and Neutralization



Assault Breaching System

EOD Mobile Unit ONE

Laser (Hunt)



Airborne Laser Mine Detection System

Super-cavitating Projectiles (Kill)



Rapid Airborne Mine Clearance System

Surf Zone & CLZ
0' - 10'

Very Shallow Water
10' - 40'

Shallow Water
40' - 200'

Deep Water
Over 200'

Obstacles
Anti-Invasion
Bottom
Moored
Floating

Buried Mine –
Promising Potential
with Low Frequency Broad Band

Surface Mine Countermeasures
Unmanned Underwater Vehicle
and Low Frequency Broadband



Buried Mine Detection

Remote Minehunting
System & MH-60S
AN/AQS20A



Sonar (Hunt)

Airborne Mine
Neutralization System



Propelled explosive
charges (Kill)

Unmanned Surface Vehicle /
Organic Airborne and Surface
Influence Sweep



Magnetic Acoustic
Influence Sweep



Shallow Water to Beach Zone

Assault Breaching System



JDAM
& CMS



COBRA

EOD Mobile Unit One



EOD Mobile
Unit (One)

LCS MCM Mission Package



LCS (LM)
13 ft Draft



2 H-60s or 1 H-60
and 3 VTUAVs



RAMICS



ALMDS

US3



RMS

UUV LFBB



VSW

40ft

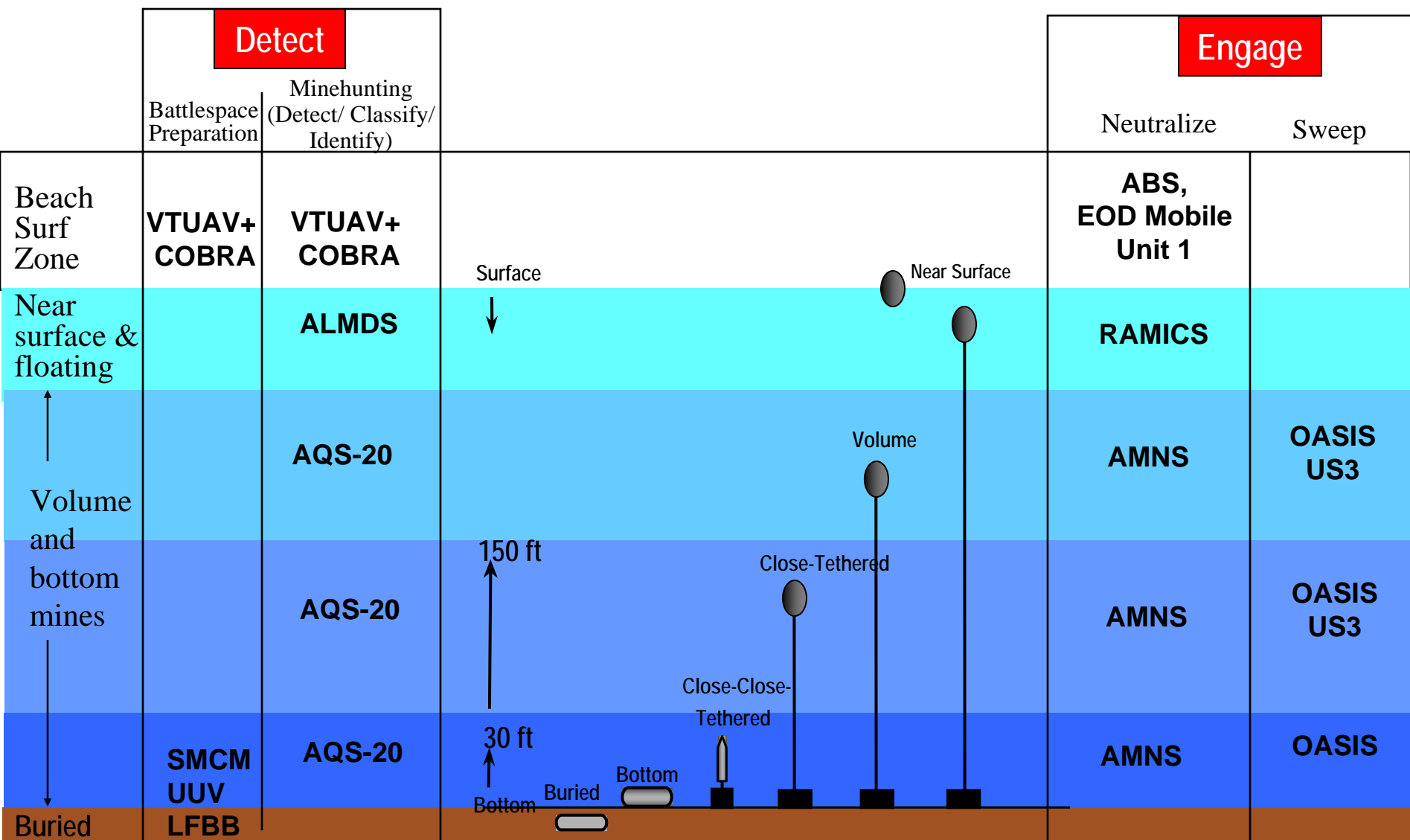
SW

BEACH

SURF



LCS MIW Mission Package: System Coverage






* NOTE : Depth Coverages Vary with System and Mine Type

UNCLASSIFIED

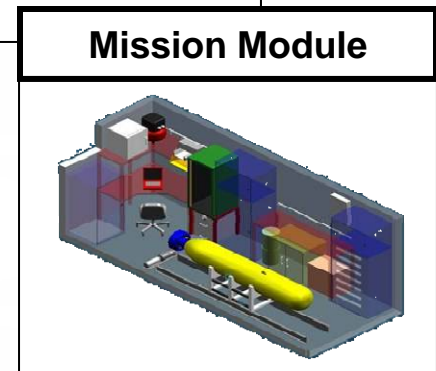
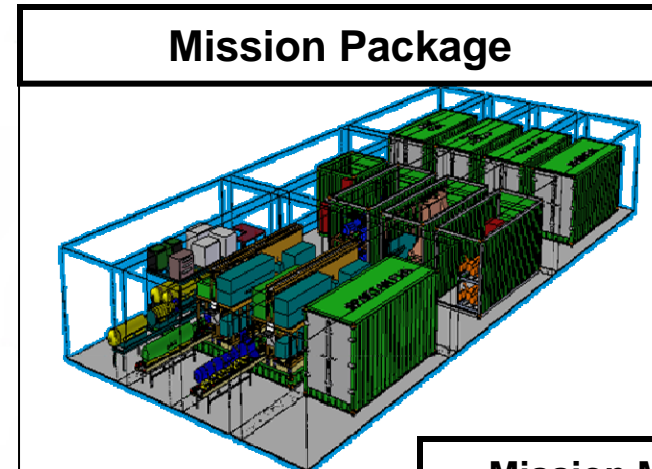
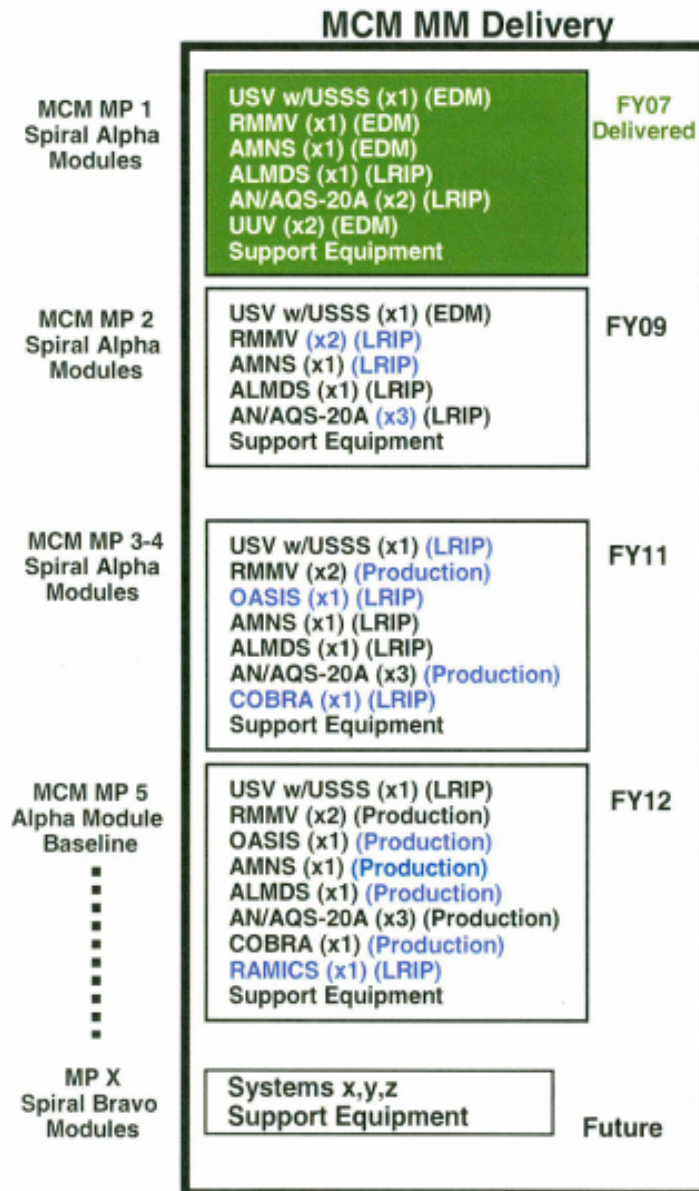


MCM Package Sensor Status

MCM Package Program	ACAT	Programmatics	Testing	Contractor	IOC
 RMS	1C	In Low Rate Initial Production	<ul style="list-style-type: none"> ✓ TECHEVAL completed on DDG-96 Mar 07 • Op Assess on USS BAINBRIDGE 14 Sep 08 	Lockheed Martin	2009
 AQS-20A	2	In Low Rate Initial Production	<ul style="list-style-type: none"> ✓ TECHEVAL on MH-60S completed • OPEVAL w/ MH-60S Aug 09 – Oct 09 	Raytheon	2010
 AMNS	2	In Low Rate Initial Production	<ul style="list-style-type: none"> ✓ MS C Approval Jan 08 • DT Live Fire Ground Testing Jul 09 	Raytheon	2010
 ALMDS	2	In Low Rate Initial Production	<ul style="list-style-type: none"> ✓ Commenced WSIT CT on MH-60S Apr 08 • Commence TECHEVAL 2nd Qtr FY09 	Northrop Grumman	2010
 OASIS	2	Milestone C: 3QFY10	<ul style="list-style-type: none"> ✓ Re-design PDR 12 Jun 08 • MH-53E OA Sep 09 	ITT Corp	2011
 RAMICS	2	Milestone C: 4QFY10	<ul style="list-style-type: none"> • MH-60S Captive Carriage & Jettison OCT 08 • Lake Glendora II Ground Testing Oct-Dec 08 	Northrop Grumman	2011
 COBRA	3	Milestone C: Jan 09	<ul style="list-style-type: none"> ✓ Started Performance Validation (MH-53E) • Integration flight tests on VTUAV Oct 09 	Northrop Grumman	2010
 CMS	3	Milestone C: FY14	<ul style="list-style-type: none"> ✓ SD&D Contract awarded 24 Jul 08 • System Requirements Review 1st Qtr FY09 	Boeing	2015
 US3	3	Milestone C: 4QFY10	<ul style="list-style-type: none"> ✓ Sweep Gear integration test on USV Jul 08 • End to End US3/USV/MP test Oct 08 	TBD	2014
 UUV LFBB	TBD	Milestone B: 2QFY09	<ul style="list-style-type: none"> • CDD in Navy Staffing 	TBD	2015



MCM Mission Package Evolution



Legend

Systems Added/Matured
Delivered

OMCM Challenges

Our most mature programs face many challenges (RMS, AQS-20A & ALMDS in or near Operational testing)

- **Sensor False Alarms**
 - SONAR – (HFWB, LFBB)
 - LIDAR – (ALMDS, RAMICS, COBRA)
 - New Data type; New viewers; Learning curve
 - High False Alarms mean longer PMA & higher False classification by PMA Operator
 - CAD/CAC – improvements needed
 - Real time algorithms in Common Console?
 - Post mission via OPMA?
- **Reliability (Ao, MTBOMF)**
 - Sensor Reliability needs to meet ORD or CPD
 - Support Equipment Reliability (CSTRS, Common Tow Cable) needs improvement
- **WorkLoad / Crew Limitations**
 - Streaming and Recovery of towed systems (high workload)
 - PMA takes long time (Fatigue adds to problem)
 - Learning Curve with new data types



Summary

- **The Mine threat is real and not getting easier**
- **The transition to Organic MCM will have its challenges; therefore, the Navy needs Industry's help in meeting Organic IOC and preservation of current forces**
 - ✓ **MCM upgrades**
 - ✓ **MH-53 Flex**
- **MCM Mission Package program making progress**
- **We must make smart investments to reduce false alarms as they drive the Detect to Neutralize timeline**



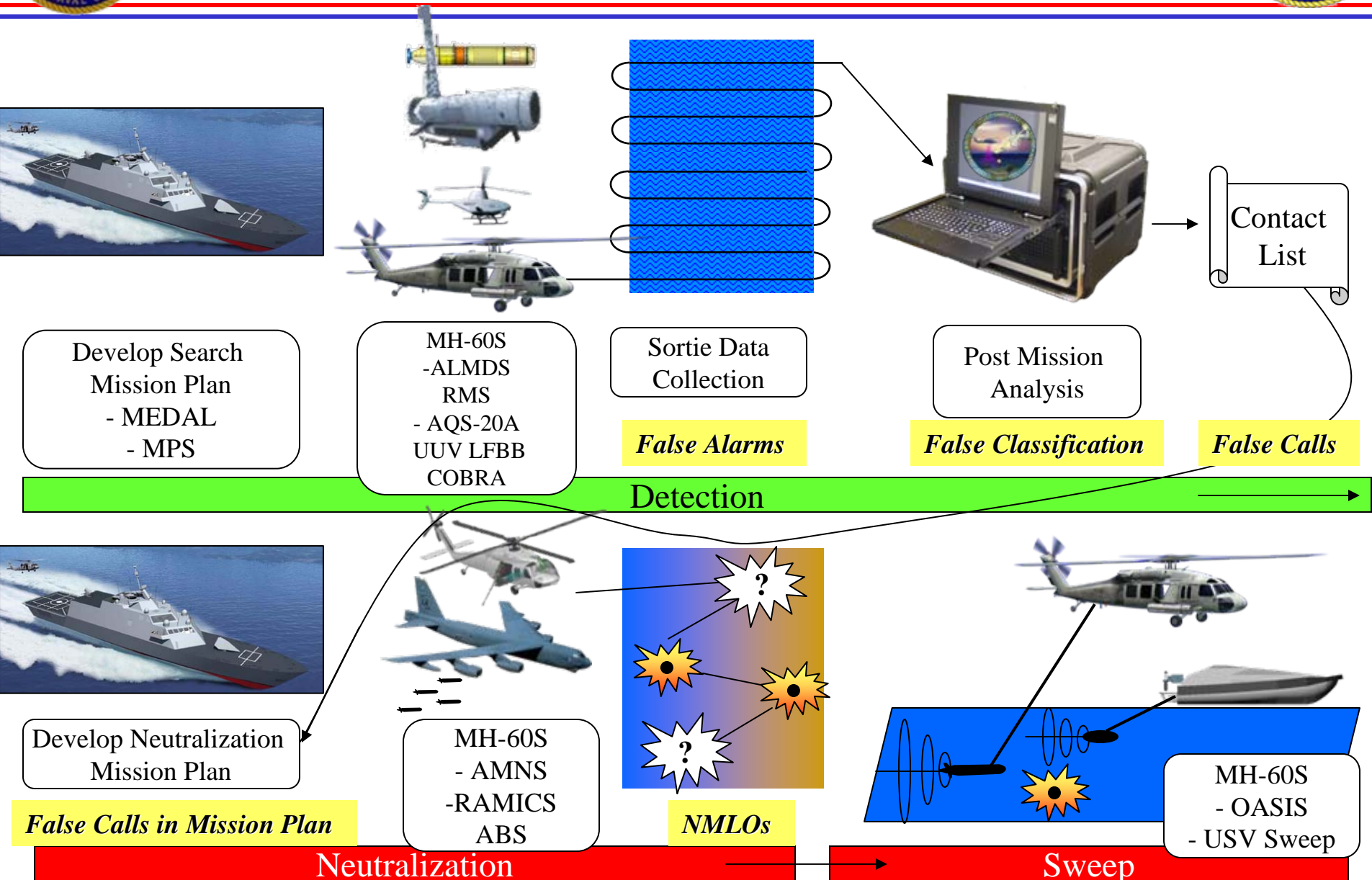
Questions?







False Alarms Lengthen Kill Chain

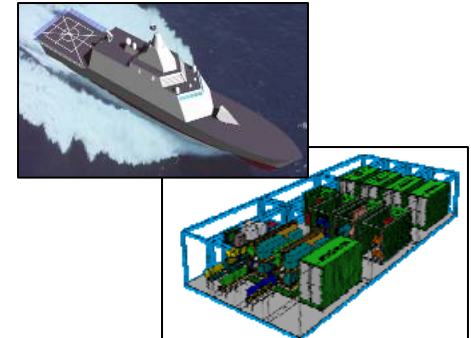
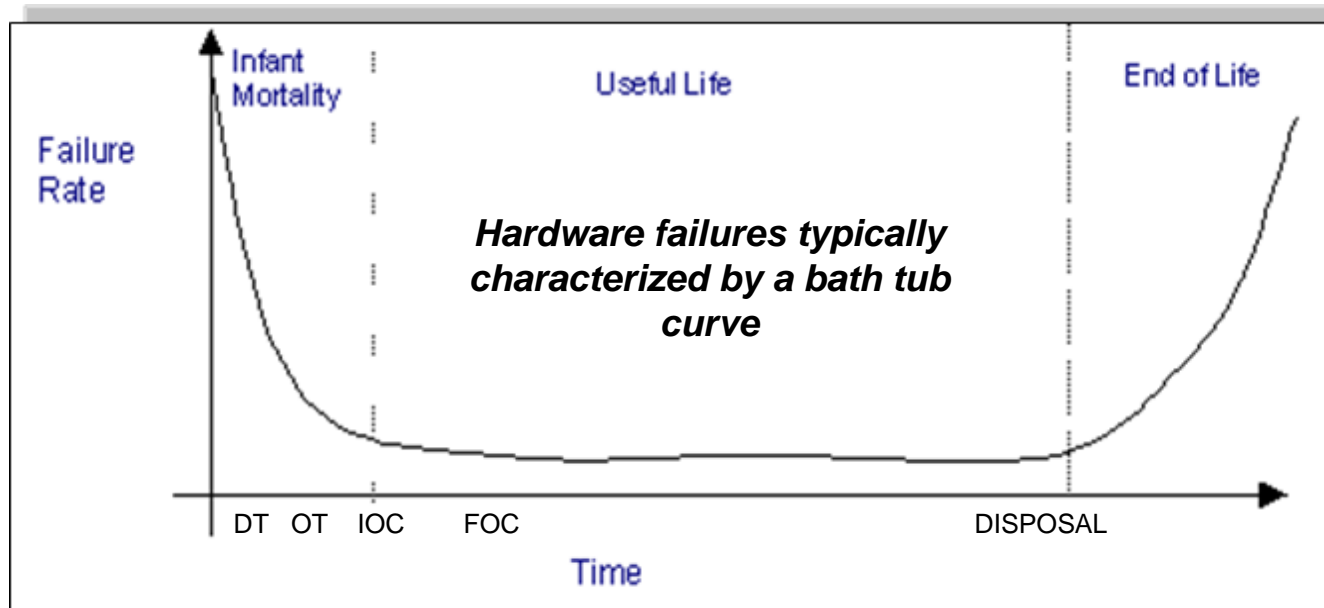


Reliability

$$Ao = \frac{Uptime}{Uptime + Downtime} = \frac{MTBF}{MTBF + (MTTR + MLDT)}$$

Mean Time to Repair & Mean Logistics Delay Time:

Number of systems on LCS and O to D level maintenance philosophy



MCM Mission Package

2 RMMV	1 AMNS
3 AQS-20A	1 US3
1 ALMDS	1 COBRA
1 OASIS	1 VTUAV
1 RAMICS	1 MH-60S

All MCO timelines are driven by required MTBF, so we must improve upon reliability to meet the requirements and increase useful life!

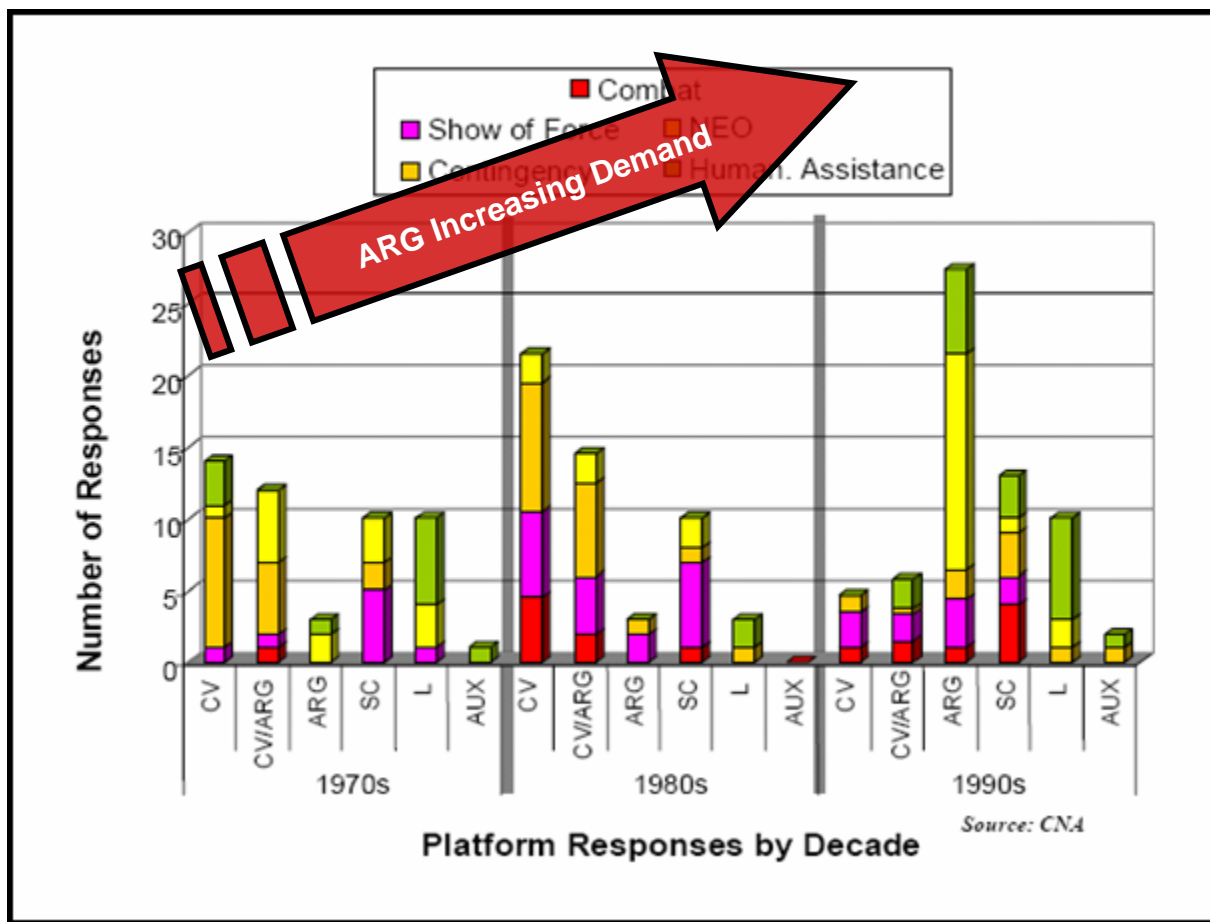
Bringing Expeditionary Warfare Into The 21ST Century



***CAPT Ed Barfield, USN
N853 Amphibious Warfare Branch Head
23 October, 2008***



Demand Signal



30 yrs of responsive and successful employment across the operational spectrum has met the demand



Resourcing the Demand

- **Innovate to Create the Effect of “More”**
 - Technological Innovation – make assets more capable, better integrate current capabilities
 - Operationally – work deployment / employment paradigms to optimize available assets
- **Leverage cooperative relationships**
- **Execute Mid – Life Programs**
- **Need to continue to grow and fund the requirement for
11 + 11 + 11**

“With regard to the 313 ship shipbuilding plan, I consider that to be the floor... knowing what the demands are out there, I think 313 is the minimum number...”
~ ADM Roughead



State of N853 Programs



- **LPD 17 Class**

- First 4 ships delivered; 3 commissioned
- 5 ships under construction in New Orleans & Pascagoula
- 10th LPD authorized and funded in FY09 Authorization and Appropriation Acts
 - 11th LPD authorized in FY09 Authorization Act: “The committee expects the budget submission for fiscal year 2010 to contain a funding request for the 11th ship of the LPD 17 class”

- **JHSV (designs)**

- PH1: Preliminary Design – 3 contracts awarded 31 JAN 08 (Austal USA; GD/Bath Iron Works; Bollinger / INCAT USA)
- Phase II Detail Design and Construction – expect selection in OCT 08
- Delivery lead vessel (Army) FY 12; delivery 1st USN vessel FY13

- **LHA (R)**

- Start fabrication Dec 08



State of N853 Programs



- **MPF(F)**
 - Increment One CDD (MLP/T-AKE) JROC and DAB approved Mar and Jul 2008 respectively
 - MLP Request For Proposal (RFP) for System Design released Aug 08
 - **Program fully funded across the FYDP**
- **Ship to Shore Connector (SSC)**
 - CDD complete; expect to enter Joint Staff Review Jan 09 - JROC MAY
 - R&D Craft Award anticipated FY11
- **LHD 8** - Contractual delivery date 15 May; target delivery date 23 March 09



Questions



Phase I Awardees

DESIGN CONCEPTS FOR JHSV



BOLLINGER / INCAT USA Partnership



Austal USA

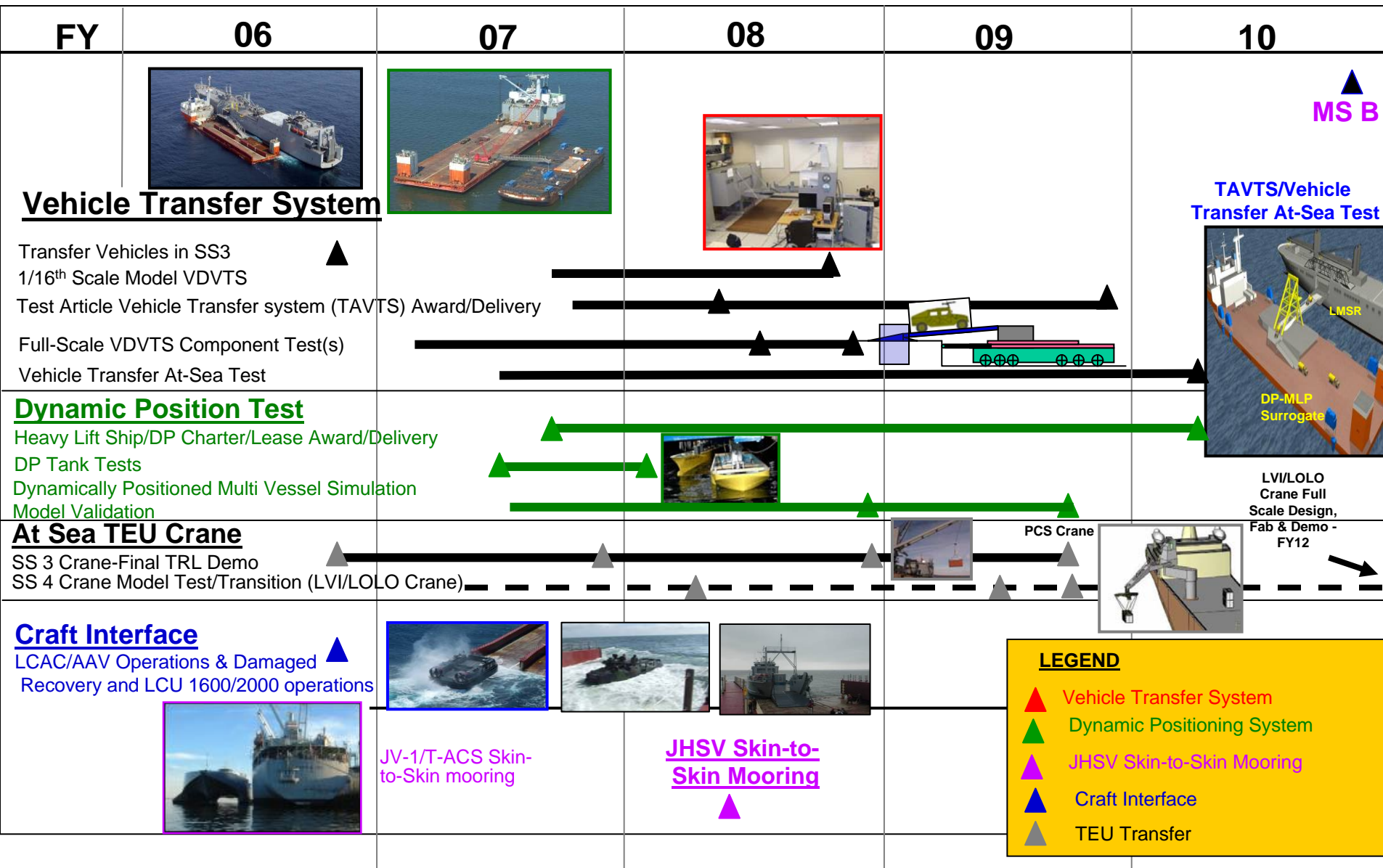
General Dynamics- BATH IRON WORKS / Rolls-Royce



Return to Programs



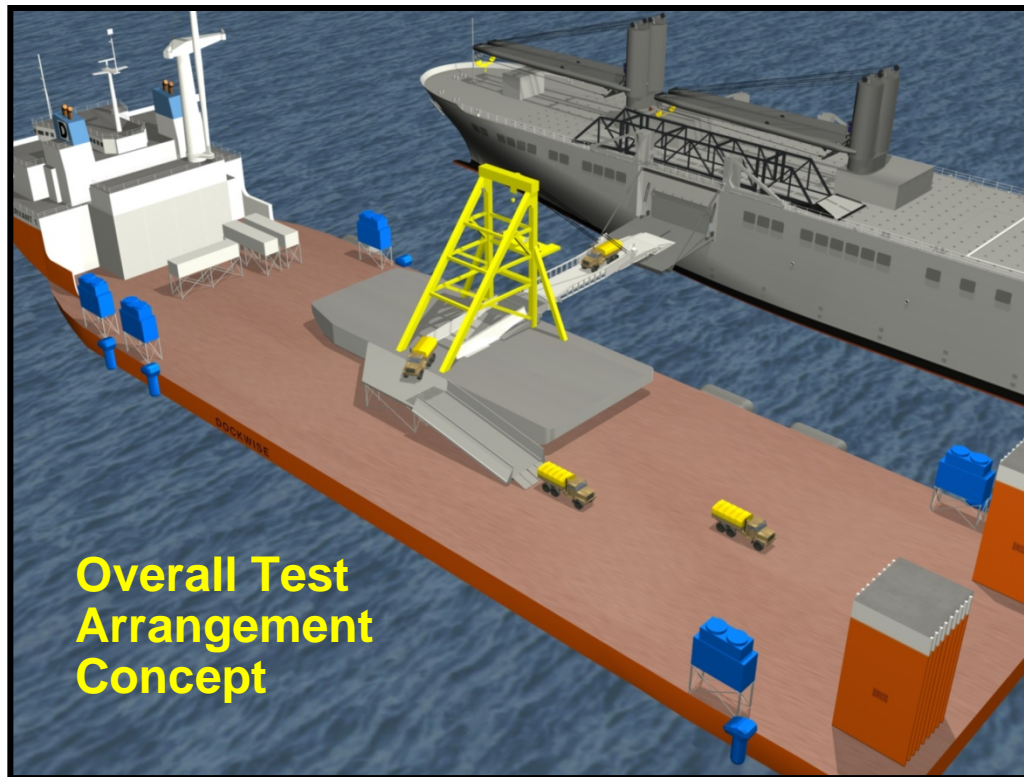
MLP Technology Development Remaining





Vehicle Transfer System Risk Reduction

Full-Scale, At-Sea, Test Article VTS (TAVTS) Demo



- Heavy Lift Ship + 'Portable' DP + TAVTS = Surrogate MLP
- TAVTS Ramp mounts to Heavy Lift Ship
- TAVTS Sideport Platform mounts to Watson Class LMSR
- Will be Tested At-Sea through Sea State 3



13th

NDIA Expeditionary Warfare Conference



EXPEDITIONARY
WARFARE
DIRECTORATE

N857

Navy Expeditionary
Combat Branch

Supporting Navy Expeditionary Combat Command,
Non-Lethal Weapons, Joint Explosive Ordnance Disposal,
and Counter Radio-controlled IED Electronic Warfare



Partnering with Industry to Support the Force

CAPT Barry Coceano

Navy Expeditionary Combat Branch Head



Expeditionary Combat Responsibilities



Requirements and Action Office for Expeditionary Warfare supporting:

- All Navy Expeditionary Combat Command (NECC) forces
- Joint Service Explosive Ordnance Disposal
- Joint Counter Radio-Controlled Improvised Explosive Device Electronic Warfare (JCREW)
- Joint Non-Lethal Weapons (JNLW)

Recognition of asymmetric threats to maritime security

- National Strategy for Maritime Security
- 2006 Quadrennial Defense Review Report
- Naval Operations Concept
- 2006 Navy Strategic Plan (NSP)
- 2008 Center for Naval Analysis C-IED Study

Unique Capabilities to Face the Asymmetric Threat



Where does NECC need your help?

Sensor Technology

- Unmanned Systems (UAV/USV/UUV)
 - More capability in a smaller package in more varied operational environments
 - User friendly design to capture the skills of technology generation
 - Inter-operable
 - Knowledge, not data
- Standoff Detection
 - ISR applications
 - Fixed-site, Force Protection, Proliferation Security Initiative, EOD
 - Counter IED and Chemical, Nuclear, Biological

Integrated armor

- Layered and adaptive protection across spectrum to defeat multiple threats without significant increase to personnel and platform footprint
- Ground vehicles, green water-borne platforms, work sites
- Plug and play, able to shed armor when not needed

Adaptive, Deployable Networks

- Incorporate wireless technology for the battlefield
- Optimize logistic footprint
- Interoperability with the Intra-Agency, local governments, NGO's

Non-Lethal Weapons



Where does JSEOD need your help?



- **Unmanned Systems**
 - UUV/UAV/Ground Robotics communications enhancement
 - Underwater vehicle sensor and neutralization technology
 - Ground Robotics advancements
 - Reduce time-on-target
 - Enhance manipulation capability
 - Extend operation life with advancements in power generation/supply
- **Standoff Detection and Disruption**
 - Determine the threat before going into harms way
 - Enhance survivability
 - Defeat the Network*
 - Spectrum of Effects: Non-kinetic, low-order, high-order neutralization
- **Forensics**
 - Radiographic systems
 - Post Blast investigation
 - Wireless transmission/reception*



Where does JCREW need your help?

Growing the JCREW Industrial Base

– **BAA N00024-08-R-6323 released May 2008**

New BAA modified to focus on Critical Technology Elements for JCREW 3.3.

Available at: <https://bids.acqcenter.com/jjeddo/Portal.nsf/Start?ReadForm>

Purpose:

- ... develop and demonstrate technologies to improve virtually all aspects of performance related to next generation CREW equipment.
- Seeking proposals that address hardware, software, technique, or technology developments

Specific areas of interest:

- Antennas And Amplifiers
- Receivers/Processing/Modulators/Integration
- Modeling And Simulation
- Common Timing And Electromagnetic Compatibility
- Additional Technology, Information, Recommendations

BAA POCs: Mary Ann Keyser – maryann.keyser@navy.mil

Margaret Booth, (301) 744-5124, margaret.booth@navy.mil

bidshelp@acqcenter.com

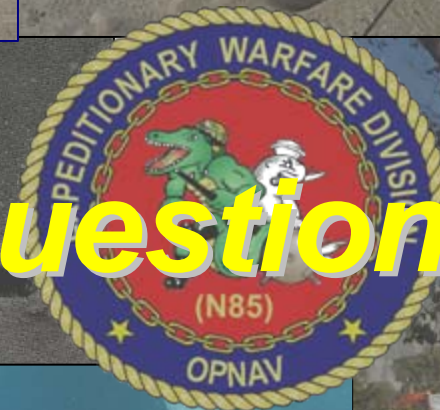
Technology and test reports on JCREW Share Point for government review



Where does Navy NLW need your help?



- Stand off vessel stopping
- Stand off vehicle stopping
- Reducing the size and weight and cost of directed energy systems
- Integration of directed energy systems into shipboard platforms as part of their self defense systems
- Determining contact intent



Questions?





Backups



Where does JCREW need your help?



- Interoperability
 - Decrease Blue Force interference and fratricide across spectrum of electronic non-kinetic weapons
- Environmental
 - Operational Temperatures
 - Humidity
 - Maritime
- Applications
 - Terrain considerations
 - Unmanned system coverage
 - Get out ahead emerging communications technology



Where does JCREW need your help?



CREW S&T GOALS

- Develop individual Critical Technology Elements (CTEs) needed to achieve Technology Readiness Levels for CREW 3.3
- Grow industry base for CREW components
- Collaborate with industry on ability to develop components for open architecture system
- Demonstrate the capabilities and limitations of a CREW open architecture system



Where does JCREW need your help?

BAA Overview

Total Proposals – 71 Round 1 / 83 Round 2/ 22 Round 3/ 55 Round 4 (\$50414K)

Antennas and Amplifiers (\$11975K)

5/22 Amplifiers (\$8153K)

6/25 Mounted antennas (\$2382K)

3/8 Dismounted antennas (\$1439K)

Receivers/Processing/Modulators/Systems Integration (\$28130K)

7/41 Transceivers (\$8664K)

5/20 Processor (\$6414K)

1/13 Direction finding (\$929K)

1/3 Next Generation Tactical Test Bed (\$2950K)

2/9 Signal Assessment (\$1347K)

1/2 Automated threat analysis (\$4863K)

3/5 Anti-Tamper (\$2958K)

Modeling and Simulation (\$7154K)

3/11 Modeling Techniques (\$1684K)

1/2 Instrumented human surrogate (\$942K)

1/3 Improved environmental characterization (\$878K)

3/8 Modeling near earth propagation (\$3650K)

Common Timing and Electromagnetic Compatibility (\$3155K)

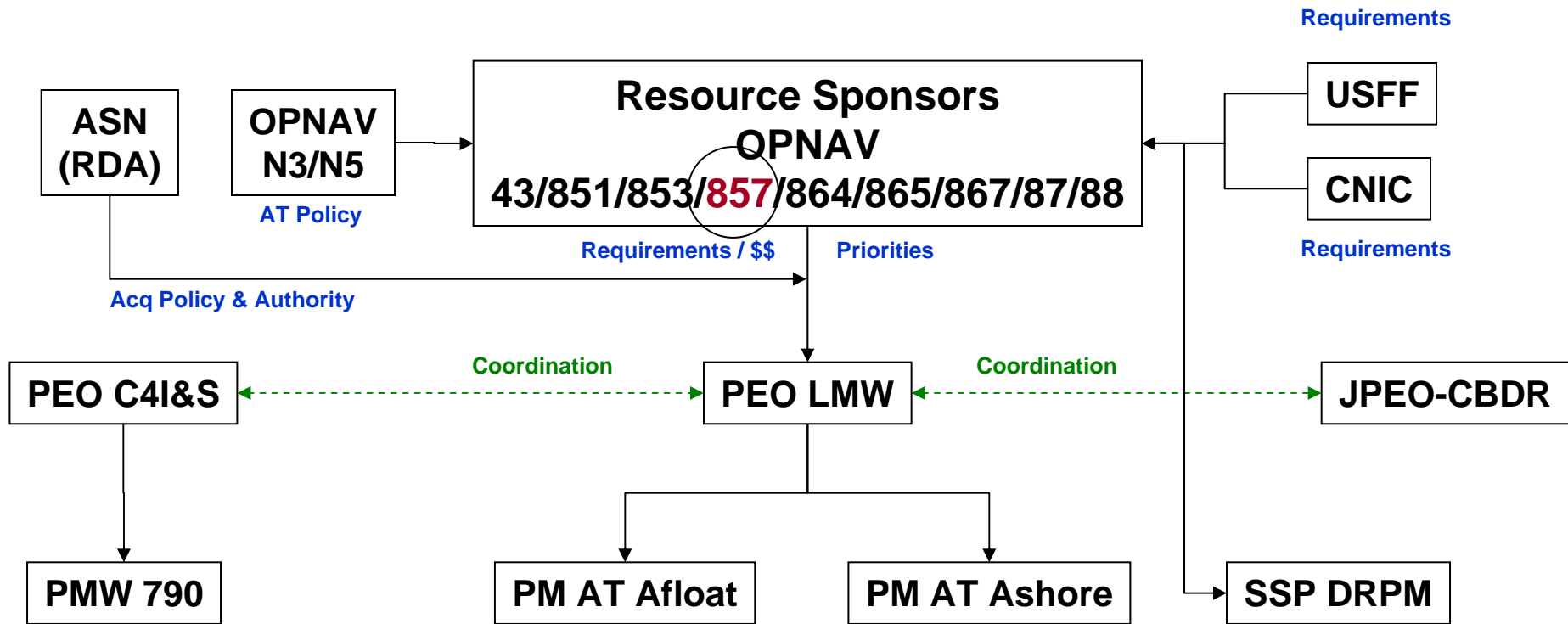
5/20 Compatibility (\$2904K)

1/12 Network Enabled (\$251K)

Note: Other large and small business contracts also being awarded by I2WD and NEOD to support internal gov'n't R&D








Where is N857?



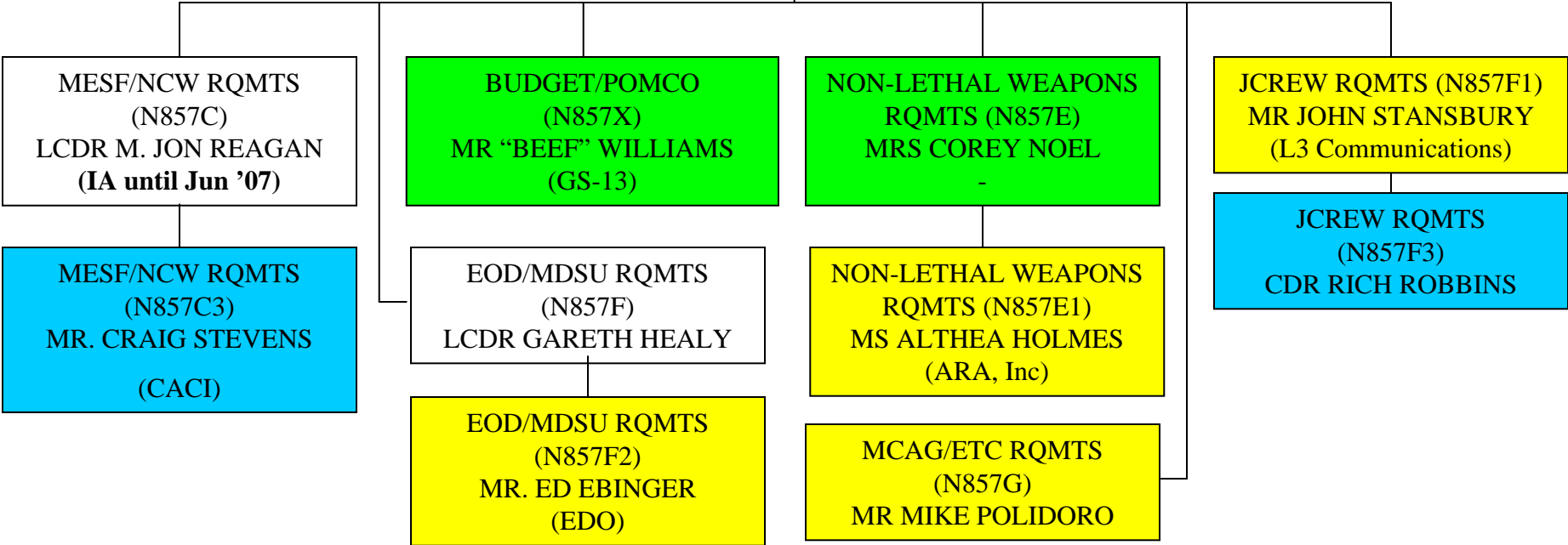


Who is N857?

-  USN
-  USCG
-  USNR (ADSW)
-  CONTRACTOR
-  NAVSEA

HEAD, NAVY EXPEDITIONARY COMBAT
BRANCH (N857)
CAPT BARRY COCEANO

PORT SECURITY LIAISON
(N857C1)/ DEPUTY N857
CDR BILL BURNS, USCG



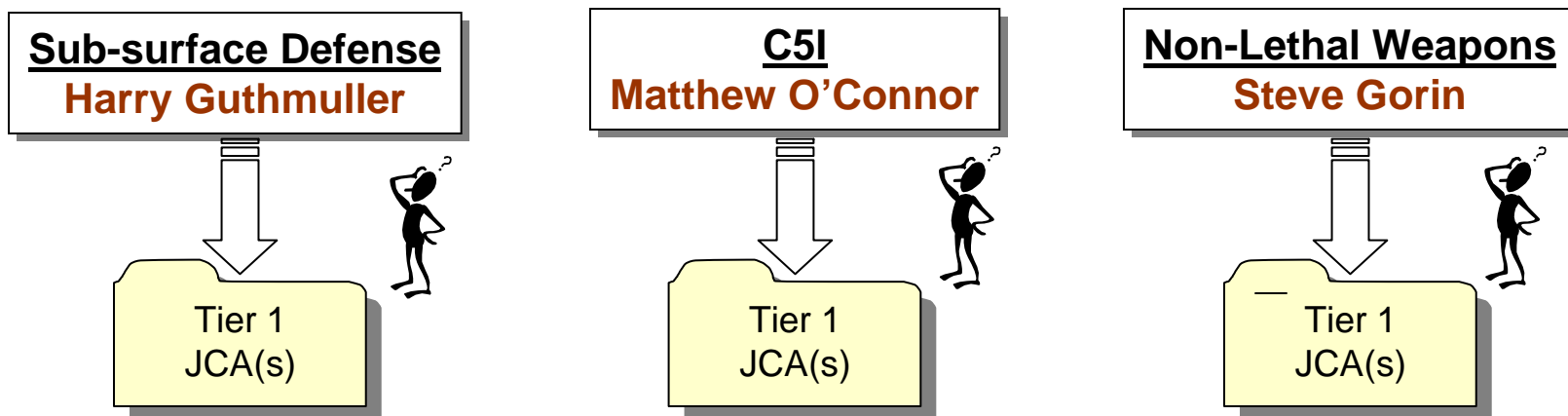


Capability Sponsors

Realignment of Capability Sponsor roles to Capability Portfolio Manager roles is being considered

Helps align N857 to the capability development and resource management approach mandated by DoD Directive 7045.20

N857/PMS 480 Capability Sponsors





Points of Contact

NECC capability development:

MESF requirements	LCDR Reagan	michael.j.reagan@navy.mil
C5I requirements	Matthew O'Connor	matthew.oconnor@navy.mil
	Mike Polidoro	michael.polidoro@navy.mil
Sub-surface Defense	Harry Guthmuller	harry.guthmullwe@navy.mil

JCREW/JSEOD capability development:

	LCDR Gareth Healy	gareth.healy@navy.mil
	Ed Ebinger	edwin.ebinger.ctr@navy.mil
	John Stansbury	john.stansbury@navy.mil

Capability Sponsors



Points of Contact



Non-lethal Weapons capability development:

Navy Central Action Officer	Corey Noel	corey.noel@navy.mil
	Steve Gorin	steve.gorin@navy.mil

Capability Sponsors

Kevin McConnell
Fires & Maneuver Integration Division
Headquarters U.S. Marine Corps (CD&I)





“We have been prepared in the past because we understood that a force in readiness must be well-trained, broadly educated, and **properly equipped** for employment across all forms of warfare.”

--Marine Corps Vision & Strategy 2025
James T. Conway
Commandant of the Marine Corps

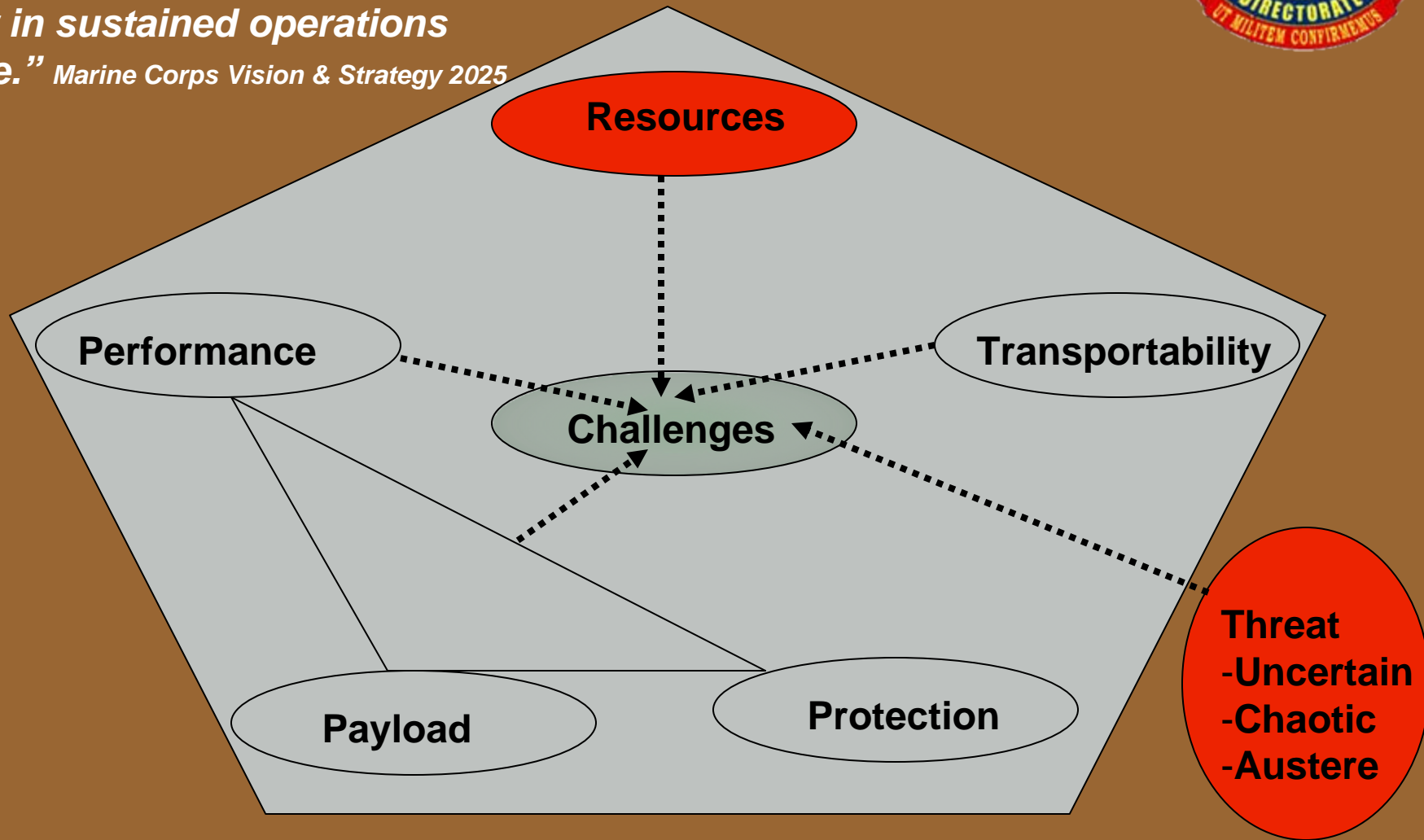


Wave Top View of:

- Mobility
- Fires
- UAS
- The Marine



“The Marine Corps of 2025 will fight and win our Nation’s battles with multicapable MAGTFs, either from the sea or in sustained operations ashore.” Marine Corps Vision & Strategy 2025



The Marine Corps is committed to providing the Nation its expeditionary “Force of Choice” for tomorrow’s challenges.



Marine Corps Tactical Wheeled Vehicle Strategy

- **Flexible and responsive**
- **In light of the changing security environment and the Marine Corps' expeditionary nature the strategy will;**
 - **Take maximum advantage of existing platforms**
 - **Emphasize a mixed fleet approach that spans the “iron triangle”**
 - **Integrate MRAP into the fleet mix**
 - **Transition to a fleet of tactical vehicles that have scalable protection (integrated A-kit and armor B kits)**
- **We will do this through a series of Decision Points that examine changing conditions**



It is not a plan to provide an armored seat for every Marine

Ground Combat Tactical Mobility



General Support Mobility
-Retain capacity

EFV



Marine Personnel Carrier



Multipurpose Mobility
-Regain payload



JLTV

Family of Vehicles

Specialized Mobility
-Increase flexibility

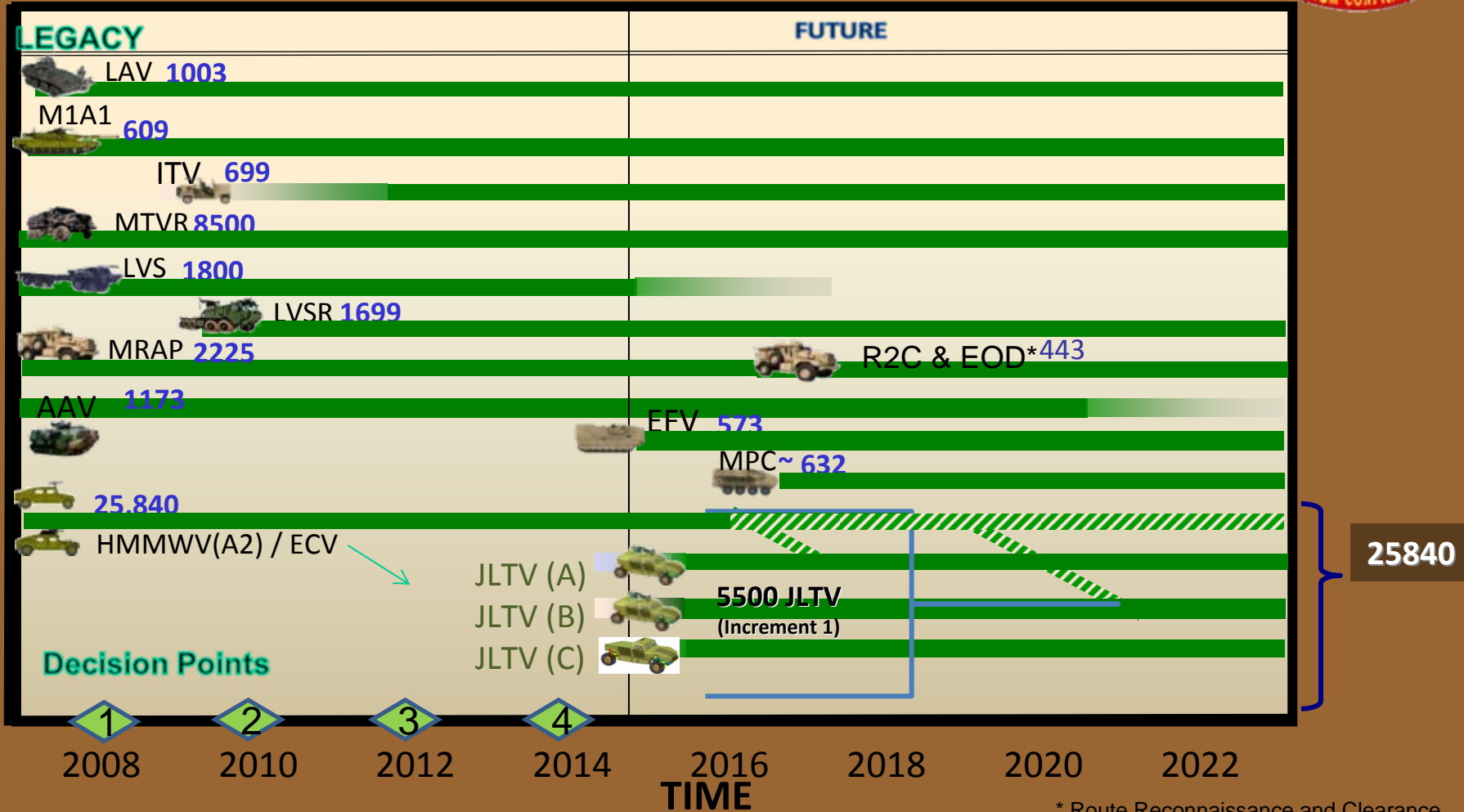


Internally Transportable Vehicle

Decision Points to Mitigate Risk



V
E
H
I
C
L
E



* Route Reconnaissance and Clearance
Explosive Ordnance Deposal

Expeditionary Fires



Naval Fires Triad

Fix Fires Initiative





Fires is almost “fixed”



EFSS

2009 – Scheduled First Fielding – 10th Marines, IOC – 1 Battery

2012 – Estimated full fielding, 10 Battery sets to OpForces, 6 systems to Schoolhouse



LW155 – M777

2005 – IOC – 1 Bn fielded – 11th Marines

2007 – Retrofit of previously fielded M777's and future production transitioned to all M777A2's with complete Digital Fire Control System (to include Excalibur Platform Integration Kit)

2011 – Estimated full fielding complete



HIMARS

2006 – First Battery Fielded

2008 – IOC – 1 Bn Fielded – 5th Bn, 11th Marines

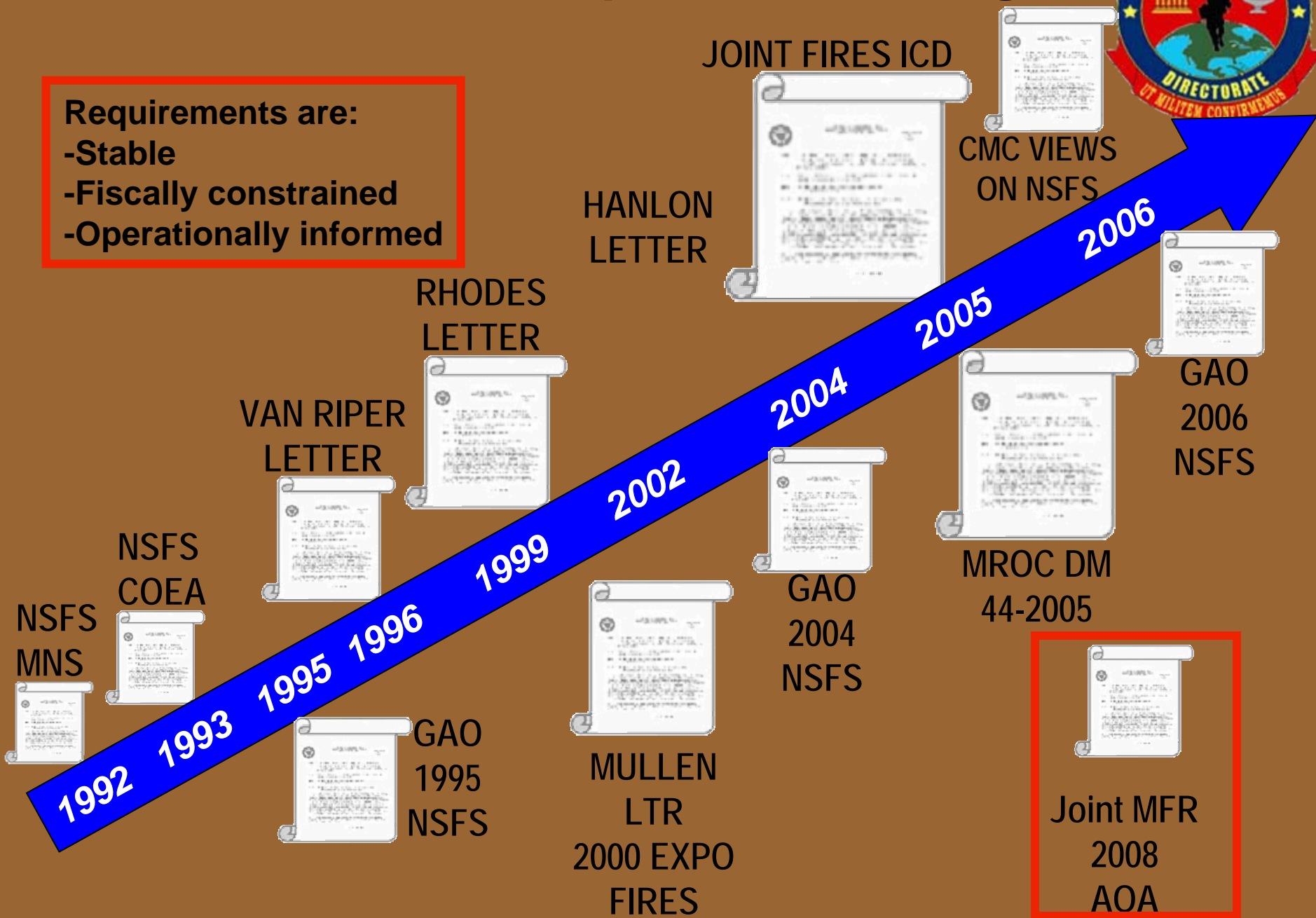
2010 – Estimated FOC – 2 Bns and Schoolhouse fielded.

**Shift focus
to
munitions**

USMC NSFS Requirements Pedigree

Requirements are:

- Stable
- Fiscally constrained
- Operationally informed



USMC NSFS Requirements for STOM (Maneuver, Counterfire and Target Acquisition)



			Near-term	Mid-term	Far-term
System Response		Threshold Objective	2.5 minutes Limits of technology	2.5 minutes Limits of technology	2.5 minutes Limits of technology
Range	Naval Guns	Threshold Objective	41 nm	63 nm	97 nm
	Other NSFS Systems	Threshold Objective	63 nm 200 nm 222 nm	97 nm 200 nm 222 nm	Limits of technology 262 nm Limits of technology
Accuracy & precision		Threshold Objective	50 m CEP 20 m CEP	50 m CEP 20 m CEP	50 m CEP 20 m CEP
Target acquisition		Threshold Objective	50 nm 63 nm	63 nm 97 nm	97 nm Limits of technology
Ordnance Effects		<p>No specific naval gun ammunition types, priorities or percentage of magazine are indicated.</p> <p>Development and fielding of NSFS systems should focus on warhead and operational effects.</p> <ul style="list-style-type: none"> Destroy/neutralize/suppress area targets (personnel/material) Destroy/neutralize/suppress moving targets Destroy moving targets (with terminal seeker) Destroy high-payoff, point targets Destroy hardened targets Mark targets for battlefield observation Provide obscuration (prevent enemy observation of friendly forces or own forces) Set fires to enemy material and facilities Illuminate battlefield at night. Mark targets for battlefield observation during periods of reduced visibility 			
Volume of fire		<ul style="list-style-type: none"> Volume equally important to precision Massed fires Suppression Combined arms effects Close fire support (see illustrative scenario) Sufficient quantities are maintained to sustain desired effects over time 			
Sustainment		All systems sustainable via UNREP			

Unmanned Aircraft Systems



Robust intelligence capabilities will support all levels of command awareness and decision making

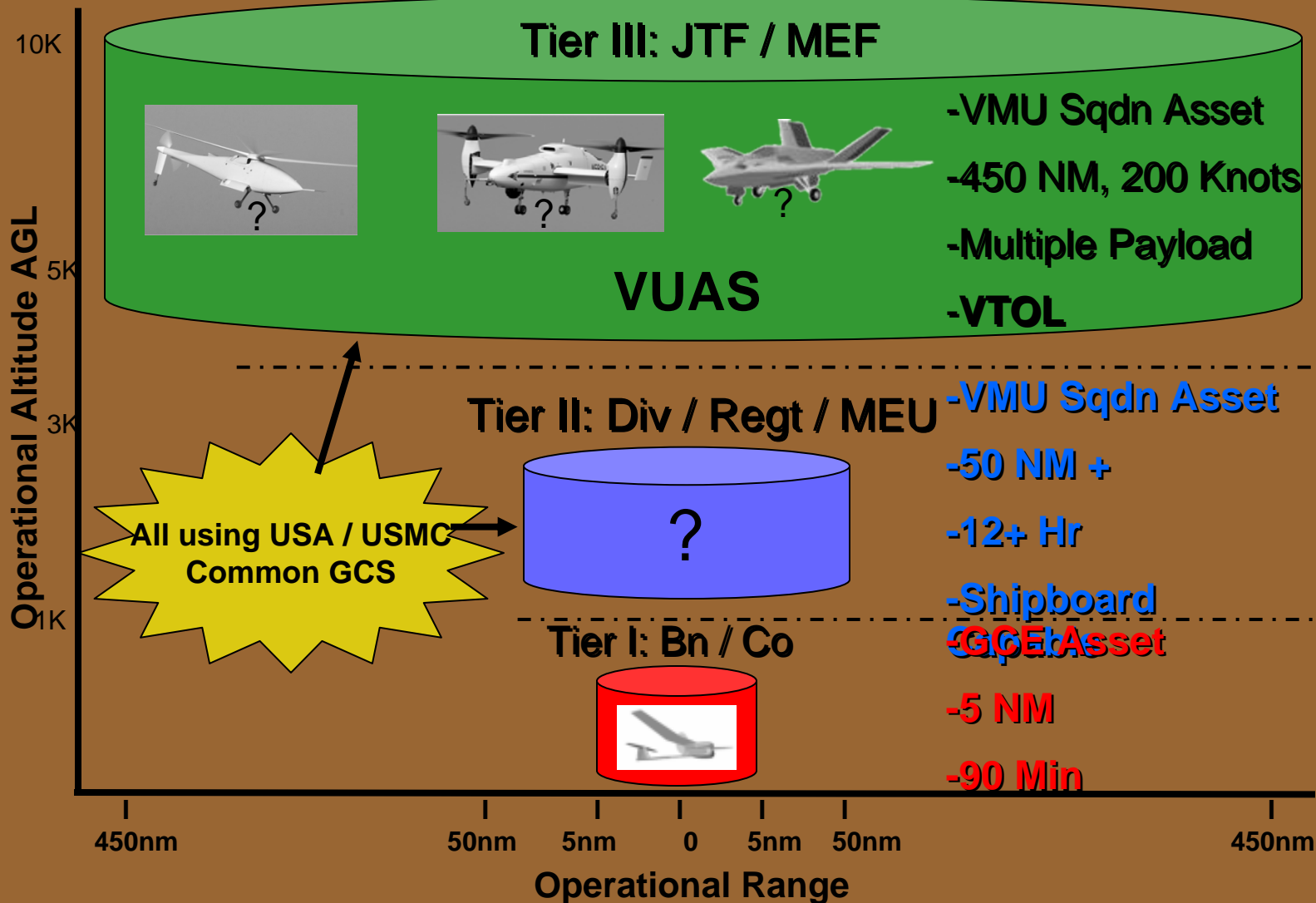


Future USMC UAS Family of Systems



Missions

- RSTA
- Strike
- Electronic Attack
- SIGINT
- Comm/Data Relay
- Synthetic Aperture Radar



- RSTA
- Comm/Data Relay
- SIGINT
- Target Designation

- RSTA

Current Operations



Tier III



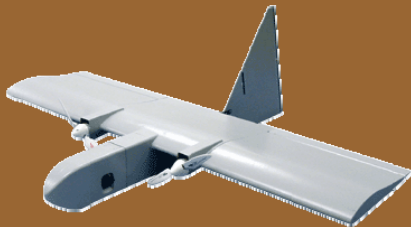
Shadow

Tier II



Scan Eagle
(service contract)

Tier I



Dragon Eye



Raven B



Wasp



Desired UAS End-State

- Standardized Command and Control Interfaces
 - Standard/ scaleable Graphical User Interfaces
 - Open-architecture/ Software Reprogrammable C2 links
 - Standardized sensor data formats/ interfaces
 - “Plug-and-Play”/ Replaceable Air Vehicle
- RF Bandwidth congestion reduction
 - On aircraft/ autonomous sensor data management
 - Multi-band/ tunable C2/ sensor links
- Sensor data management/ dissemination
 - Autonomous Processing
 - Demand-pull Dissemination
 - Demand-pull Archiving
- Plug-and-Play Payloads designed to defined SWaP constraints and standardized interfaces



Future Capabilities

- Cargo UAS –emerging requirements for unmanned logistics delivery
- Persistent Strike- Developing tactic to maintain weapons platform on station for extended period without extensive sortie rate (Hunter-Killer teams)
- Adverse weather and foliage penetration capabilities
- Wide Area Surveillance
- Interoperability and Network capabilities

Focus on the Individual Marine. The individual Marine will remain our most important warfighting asset...



**LWH**

Light Weight Helmet
3.45 lbs

Helmet Cover

0.15 lbs

MTV

Modular Tactical Vest
8.4 lbs

E-SAPI

Enhanced Small Arms
Protective Inserts (x2)
10.9 lbs

Side-SAPI

Side Small Arms
Protective Inserts (x2)
7 lbs

Magazine

with Ammunition (x13)
13.65 lbs

MPB

Multi-purpose Bayonet
1.3 lbs

MRE

Meal Ready to Eat (x3)
3.9 lbs

ICB

Infantry Combat Boot
4 lbs

IFAK

Individual First Aid Kit
1.0 lbs

**Ballistic Eye Wear**

0.15 lbs

Ear Plugs

with case
0.1 lbs

Hydration System

with water
6.3 lbs

M16 A4

with attachments
8.98 lbs

Pouches

1.9 lbs

G940 Green Smoke

Grenade (x2)
4.0 lbs

G8811 Frag Grenade

(x2)
4.0 lbs

Gloves

0.33 lbs

Knee and Elbow Pads

1.0 lbs

ILBE

Individual Load Bearing
Equipment
10.5 lbs

Combat Assault Sling

0.42 lbs

Over 91 pounds

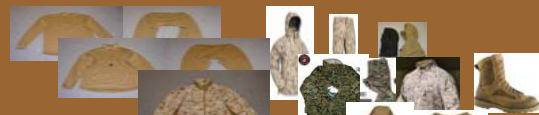


Requirement

Payload

Future

Current



USMC Clothing Layers



FROG

Flame Resistant Organizational Gear



Lightweight Helmet



ESS

Ballistic Eye Protection



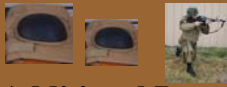
Quietpro

Hearing Protection / Enhancement



MTV / EPC

Tactical Vest / Carrier w/Plates



Quadgard

Additional Protection Materials



ILBE

Individual Load Bearing Equipment

Lighter, Integrated, Modern, Modular, Scalable
Durability, Systems Approach
2 MEU / 2 MEB Capability

Lighter, Integrated, Improved Performance
Contingency Capability

Lighter, Integrated, Modular, Scalable
Improved Performance (7.62)
All Marines

Lighter, Integrated, Laser Protection,
Compatible Inserts
All Marines

Lighter, Integrated, Improved Capability
All Marines

Lighter, Integrated, Modular, Scalable
Quick Release, Weight Distribution,
Increased Protection, Systems Approach
All Marines

Lighter, Integrated, Improved Capability
As Required

Lighter, Integrated, Modular, Scalable
All Marines

7 Layer System

**Increment Wx
Combat Shirt**

**Joint Headborne
System**

**Improved Modular
Eye Protection**

**Improved Hearing
Protection / Enhancement**

**Improved Modular
Tactical Vest / Carrier**

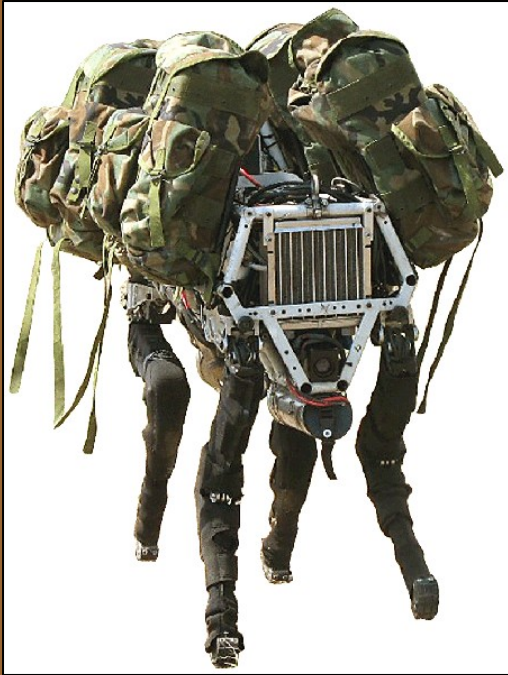
Integrated Solution

Integrated Solution

Performance



Transfer the Load



Boston Dynamic's Big Dog





QUESTIONS?



Expeditionary Warfare Now and Into the 21st Century

Mr. Roger Smith
Deputy Assistant Secretary of the Navy
for Expeditionary Warfare

21 Oct 2008



**Assistant Secy of Navy
(RDA)
Hon. Sean Stackley**

**Deputy Assistant
Secretariats
of the Navy (DASNs)**

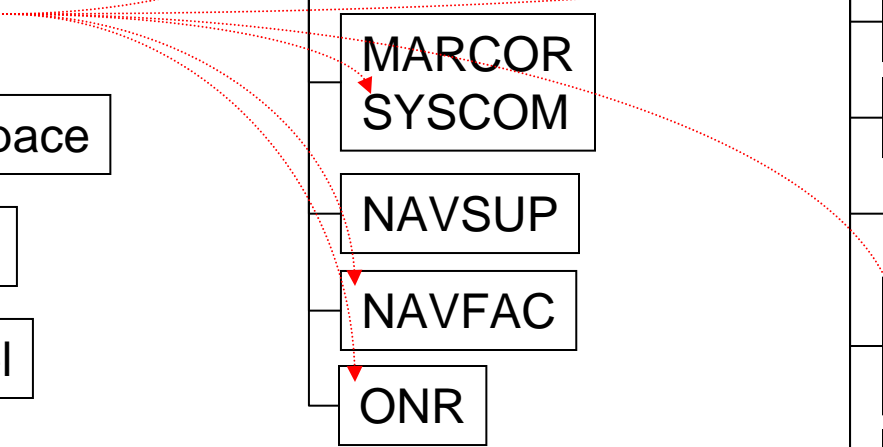
- DASN Air
- DASN Ships
- DASN ExW**
- DASN C4I/Space
- DASN AL&M
- Gen. Counsel

**System
Commands**

- NAVAIR
- NAVSEA
- SPAWAR
- MARCOR
SYSCOM
- NAVSUP
- NAVFAC
- ONR

**Program Executive
Officers (PEOs)**

- JSF
- Ships
- Land Sys
- Submarines
- C4I
- Space Sys
- Littoral & Mine
Warfare
- A/C Carriers
- Tac Air





DASN ExW

DASN ExW

R. Smith

SES

Deputy DASN

Col T. Russell

Administrative Assist.

J. Kelly

YB-2

NECC Branch

Capt T. Miller

Ground Combat Branch

Rick Ellis

YA-3

Ground Support Branch

LtCol C. McKay

Force Protection Branch

Tim Gaffney (ICAF)

Technology and Rapid Development Branch

Brian Kiviat

Joseph Vignali

USMC Financial Management Intern

Katherine Chung

NECC
Riverine
EOD
Shipboard
Prot. Sys.
AT FP Afloat
UXODC
IED Defeat
JCREW
AT FR Ashore

EFV
JLTV
LAV
LW155
MPC
FCS
EFSS
HiMARS
M1A1 FEP
ITV

JCTD
ACTD
JUONS
RDD
FNC
UUNS

MRAP
Body Armor
CBRN
LVSR
MTVR
Flatrack Refuel
MTVR Trailer

Summary:

	Auth/Onbd
Military:	2/3
Civilian:	4/4
Total:	6/7
Detail:	3/2
Intern	0/1
Cont:	0/0

Matrixed positions do not count against staffing levels.

Marine

Navy

Civilian



DASN ExW Portfolio

Program	APPN	2008	2009	2010	2011	2012	2013	2014	2015	Total
Expeditionary Fighting vehicle	RDTE	243,932	266,052	211,876	189,333	174,149	88,005	77,475	51,436	1,302,258
	PMC				70,036	466,523	575,568	591,634	656,907	2,360,668
Joint Light Tactical Vehicle	RDTE	39,969	43,997	58,851	84,139	96,236	74,374	32,109	25,894	455,569
	PMC					25,220	123,490	459,195	459,195	1,067,100
Marine Personnel Carrier	RDTE	9,741	6,500	3,179	27,500	85,200	88,900	68,900	50,000	339,920
	PMC	0	0	500	500	500	500	600	113,225	115,825
Combat Support Mobility	RDTE	4,834	3,447	3,150	3,525	2,091	1,804	1,858	1,914	22,623
	PMC	806,518	299,088	277,195	225,806	195,772	88,117	56,435	63,243	2,012,174
Combat Fires	RDTE	9,341	7,859	8,499	4,668	7,105	7,529	7,680	7,834	60,515
	PMC	292,607	134,908	158,037	53,521	23,909	8,497	8,937	9,080	689,496
Legacy Combat Maneuver	RDTE	14,766	49,382	66,497	49,055	39,483	19,894	6,175	6,397	251,649
	PMC	274,774	192,479	79,715	194,418	378,188	414,988	240,758	216,312	1,991,632
Engineering Support	RDTE									0
	PMC	320,961	129,914	169,434	143,837	84,013	87,544	90,084	92,494	1,118,281
Force Protection	RDTE	124,277	7,594	8,195	8,901	9,574	10,051	10,252	10,457	189,301
	PMC	1,901,542	1,941,818	98,322	132,436	92,995	138,459	127,484	149,841	4,582,897
Non-Lethal Weapons	RDTE	55,685	46,902	47,622	48,698	49,367	50,368	51,375	52,402	402,419
	PMC									0
Total	RDTE	502,545	431,733	407,869	415,819	463,205	340,925	255,824	206,334	3,024,254
	PMC	3,596,402	2,698,207	783,203	820,554	1,267,120	1,437,163	1,575,127	1,760,297	13,938,073
		4,098,947	3,129,940	1,191,072	1,236,373	1,730,325	1,778,088	1,830,951	1,966,631	16,962,327

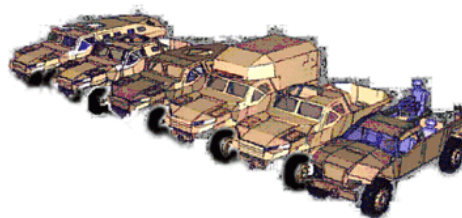
\$16.9B
FY08 – FY15



New Acquisition Deliveries



Prog.	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19
ITV												
LW155												
HIMARS												
EFSS												
LVSR												
JLTV												
EFV												
MPC												





Expedited Efforts

ISO GWOT



- MRAP

- Produced to date
 - 13,346
 - 10,583 in theater
- In Production
 - 2,492
 - 2,763 Awaiting GFE/in transit to theater
- Executed >\$24.1B



- CREW

- Produced to Date
 - 9,163 CVRJs
 - 1,143 MMBJs
 - 9,417 Chameleons
 - 1,142 Hunters
- In Production
 - 4,265 CVRJs
 - 595 MMBJs
- Executed >\$1.8B





Urgent Needs Rapid Response

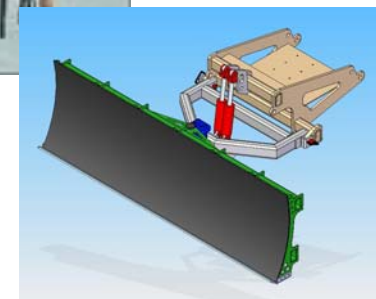
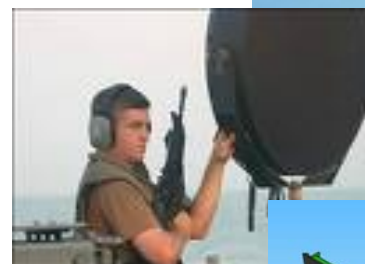
Rapid Deployment Capability

- COTS/GOTS Fielding
 - gMAV -- Rotary wing UAV for EOD
 - GBD-III Laser Dazzler – (pending approval)
 - Counter-Surveillance Sensors – (pending approval)



Rapid Development and Deployment

- Prototype Systems Development
 - Counter Suicide Bomber Sensor
 - Route Clearance Blade
 - Chem/Bio/Explosives Sensors for boarding teams
 - Small UAV RF Reconnaissance payload



Providing Immediate Response to
MARCENT and NAVCENT Needs



Future World Dynamics

The Reality of Tomorrow



- Population Growth in Unsustainable Regions
- Rising Peer Competitors
 - China, India, Russia, Brazil
- Increased Resource Competition
 - Clean Water
 - Energy
- Technology Explosion – Narrowing of US Edge
 - Computation
 - Nanotechnology
 - Genetics and biotechnology
- Diminishing Economic Leverage
 - Globalization
 - Integrated Economies





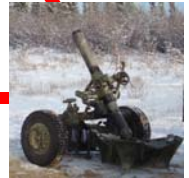
Long War Guiding Principals

- Naval Character
- **Lethality**
- Deployability
- **Self-Sufficiency**
- Adaptability
- Interoperability



Lethality

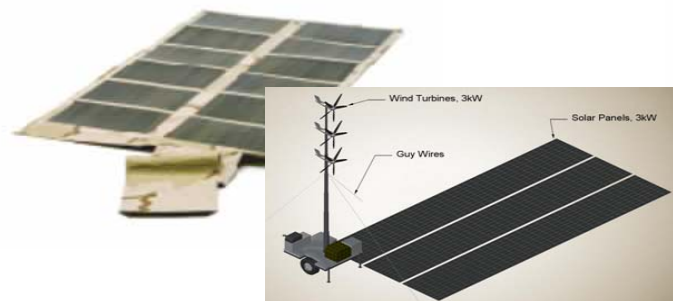
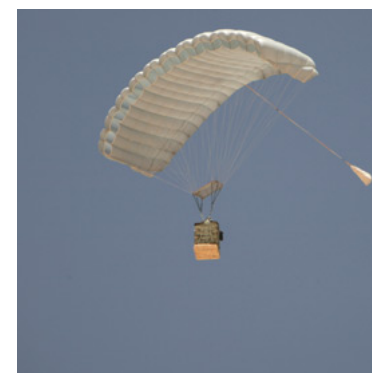
- Triad of Ground Fires
 - High Mobility Artillery Rocket System
 - Lightweight 155MM Howitzer
 - Expeditionary Fire Support System
- Follow-on to SMAW
- Infantry Automatic Rifle





Self-Sufficiency

- Internally Transportable Vehicle
- Precision Aerial Delivery System
- Lightweight Water Purifier
- Expeditionary Fuel System
- Alternate Power Sources





Maneuver Warfare

- Legacy Platform Improvements
 - Amphibious Assault Vehicle
 - Light Armored Vehicle
 - M1A1 Main Battle Tank
- Next Generation
 - Expeditionary Fighting Vehicle
 - Marine Personnel Carrier
 - Joint Light Tactical Vehicle





Science & Technology

"Invest in science and technology to provide the 'seed corn' for future capabilities and prevent technological surprise."

J. T. Conway, CMC Planning Guidance

- Enhanced Small-Unit Situational Awareness

- Sensors and Sensor Systems
- Operational Culture Learning and Language
- Tagging, Tracking and Locating



- Lethality and Survivability

- Enhanced Organic Small-Unit Weapons Effect
- Counter Improvised Explosive Devices

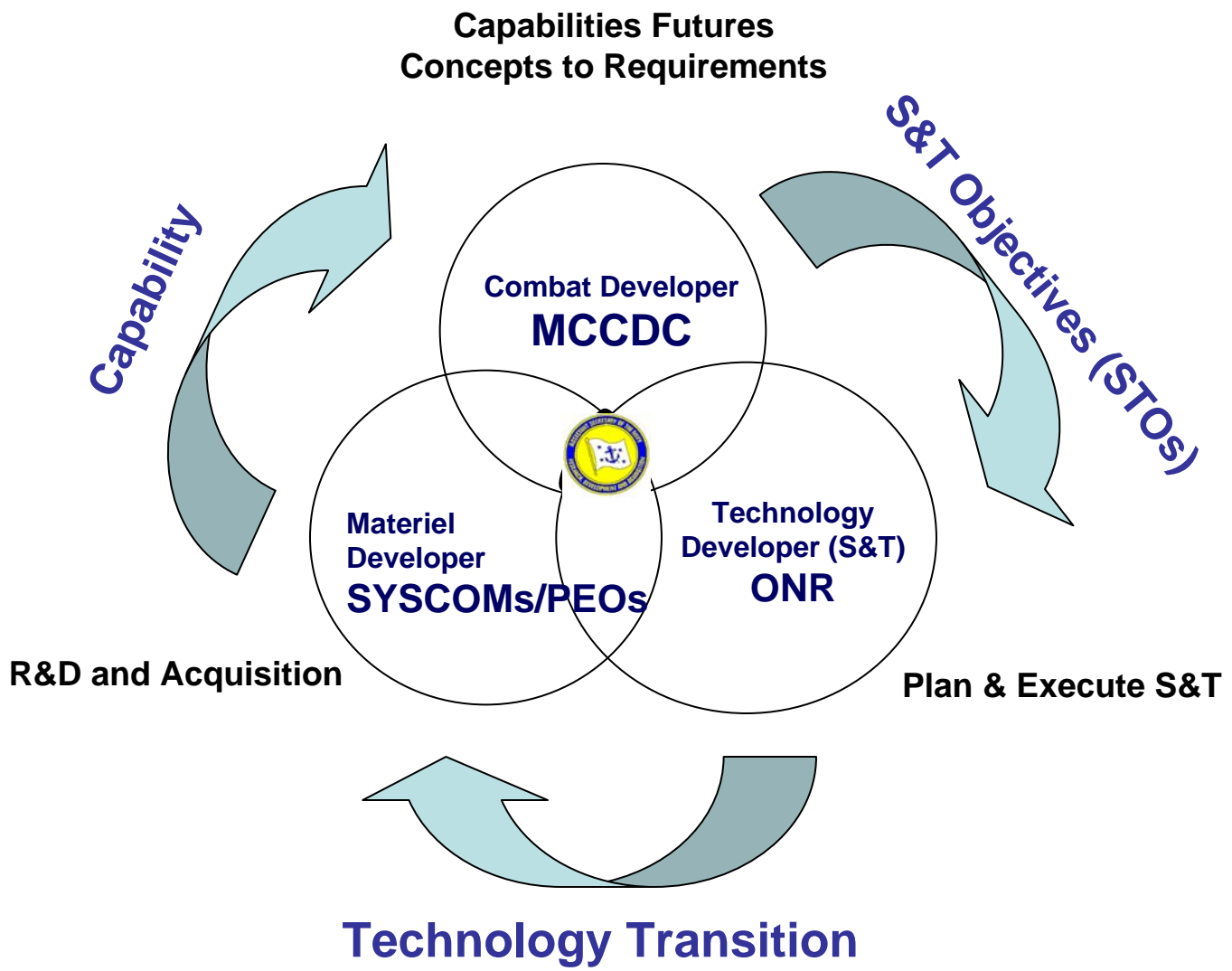
- Mobility

- Individual Mobility & Combat Load Reduction
- Small-Unit Mobility





Future Capability Process

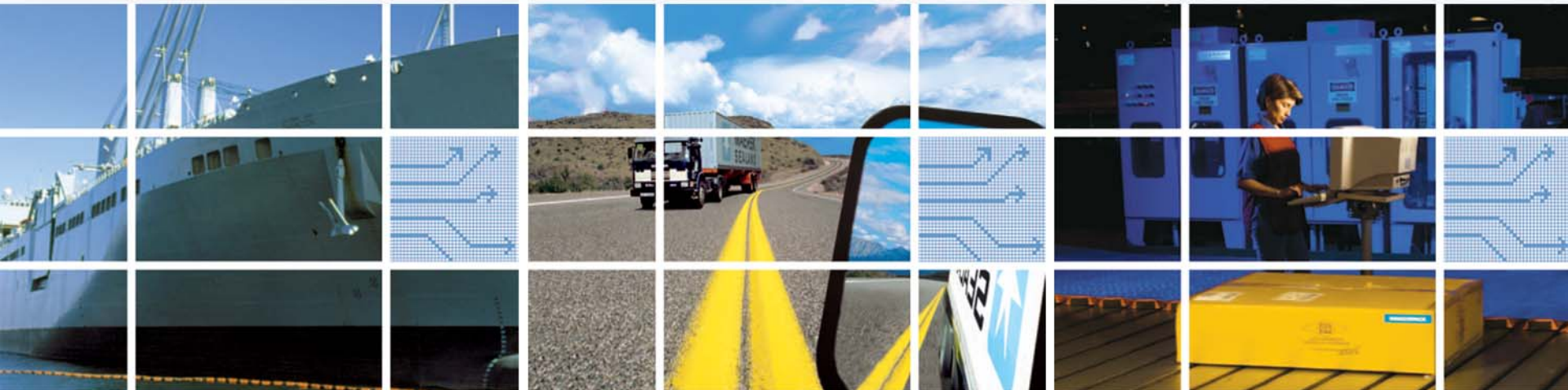




Questions?????



➤ Global Solutions in the 21st Century – The Defense/Commercial Partnership



National Defense Industry Association

21 Oct 2008



MAERSK LINE, LIMITED

➤ Global Maritime Businesses



Container Shipping & Related Activities



Maersk Line; Maersk Logistics; Safmarine; APM Terminals; Maersk Line, Limited

- World's largest container ship fleet (more than 550 vessels)
- Second largest container terminal operator (more than 45 terminals)
- Ship design, technical vessel operations, crewing, engineering and finance for more than 500 container vessels

Energy & Offshore



Maersk Oil; Maersk Contractors; Maersk Supply Service

- Oil and gas exploration, production and support services
- Operators of 30 rigs and 55 offshore supply vessels

Tankers & Related Activities



Maersk Tankers; Svitzer; Norfolkline

- Petroleum, chemical and gas carriers (more than 150 vessels)
- Tug, support/salvage and ro/ro (more than 600 vessels)

Shipbuilding & Other



Odense Shipyard; Maersk Container Industri; Dansk Supermarked; Rosti

- Leading global shipbuilder with five shipyards in Europe
- Builders of EMMA MAERSK, world's largest container ship
- Retail management and consumer plastics production in Denmark



MAERSK LINE, LIMITED

➤ Our Customers

➔ Some of our more than 100,000 Customers

WAL★MART *Always**

UNITED STATES TRANSPORTATION COMMAND

TARGET

Marshall Field's

mervyn's

★ macy's
MERCHANDISING
GROUP

THE HOME DEPOT

SONY

DR
duane reade

ONEIDA

KOHL'S

★ **CONVERSE**

SAUCONY

Shop:
GAP

Nike

STARBUCKS
COFFEE

Longs Drugs

★ **Heineken**

Meldisco
A Footstar company
footstar

Fred Meyer

case LOGIC

eCCO

VOLVERINE

Ford

QUIKSILVER

WILSONS
LEATHER

COST PLUS
WORLD MARKET

FRANK'S
NURSERY & CRAFTS

Reebok

Franklin

EASTERN
MOUNTAIN
SPORTS



LIZ CLAIBORNE

ROCKY BARREL
Old Country Store

GENESCO

Smith & Hawken

Timberland

VAN HEUSEN

WILLIAMS-SONOMA

TUMI

STAPLES

Foot Locker

PUMA

mart

IBM

CITY
Furniture

CONAIR



MAERSK LINE, LIMITED





➤ Strategic Chokepoints



Suez Canal

 **MAERSK LINE, LIMITED**



Panama Canal

➤ 1980's



➤ Today



MAERSK LINE, LIMITED

➤ Global Financial Repercussions



“When the stock market crashed, Franklin D. Roosevelt got on the television and didn’t just talk about the, you know, the princes of greed. He said, ‘Look, here’s what happened.’” – Sen. Joe Biden

➤ Global Issues – Global Responses



Infrastructure





➤ Today

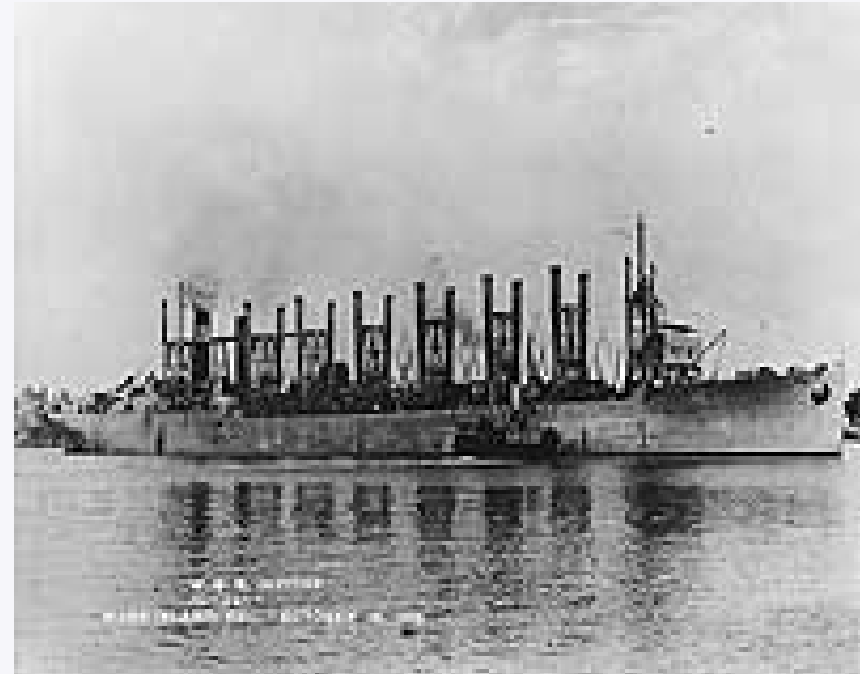


Tomorrow



➤ LANGLEY / JUPITER

Photo # NH 81279 USS Langley off San Diego, California, with USS Somers, 1928



➤ WW II Merchant Support



➤ Five Maritime Prepositioning Ships converted from Maersk combination ships



➤ Two Ammunition Ships converted from Maersk container ships



- Eight Fast Sealift Ships converted from Sealand SL-7 container ships



MAERSK LINE, LIMITED



S-Class Container Ship



Type: Post Panamax Container Ship

Length: 347 Meters

Beam: 42.8 Meters

Speed: 24.6 Kts

Availability: 25 In Service
2 Under Construction

Mission Support Platform



Commercial Off the Shelf Platform

Flexible and Modular Capabilities

Conversion Time About 1 Year

Cost Effective

➤ AFSB Graphics S-Class



MAERSK LINE, LIMITED

➤ Thank You

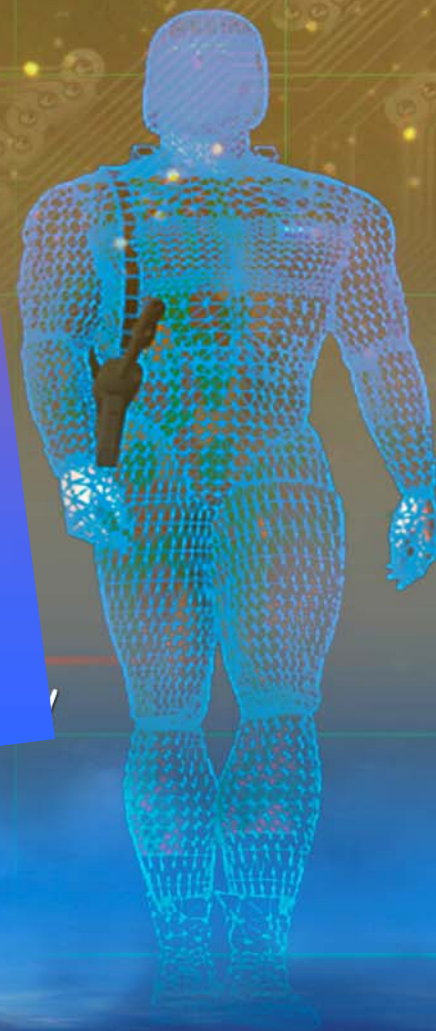


Future Technologies

Dr. John Pazik

Office of Naval Research

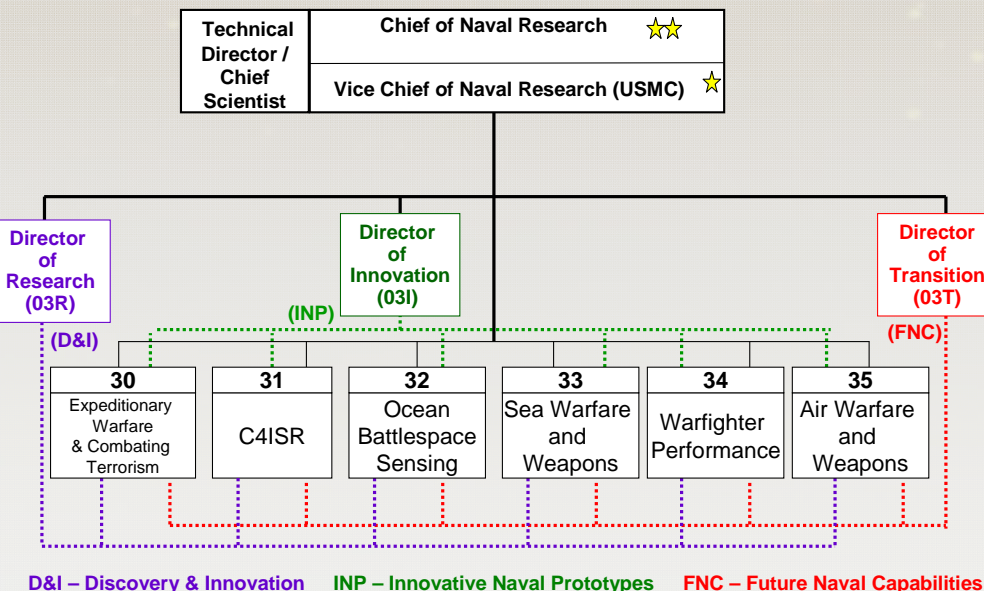
Ship Systems & Engineering Research Division



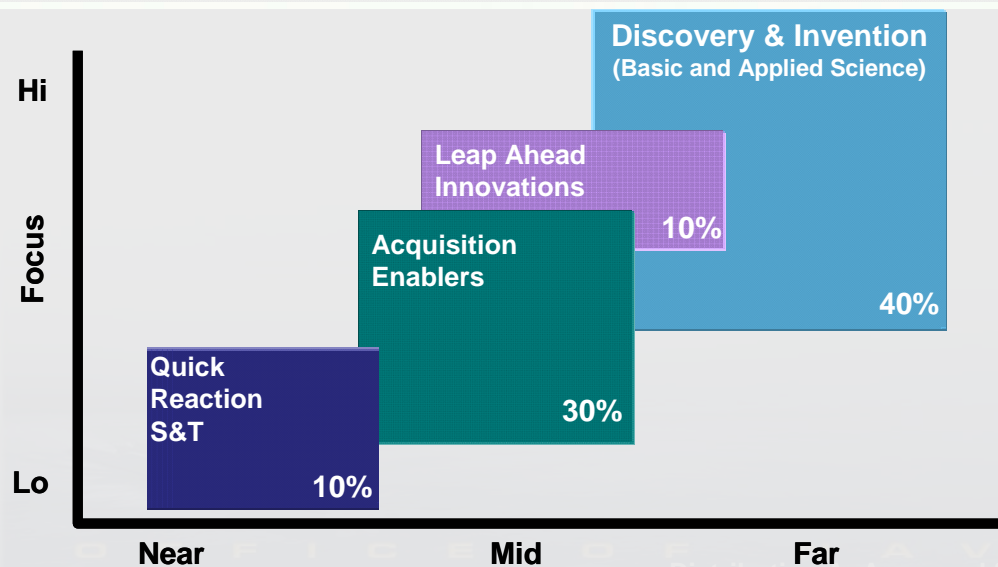
Revolutionary Research . . . Relevant Results

O F F I C E O F N A V A L R E S E A R C H

Distribution A: Approved for Public Release



D&I – Discovery & Innovation INP – Innovative Naval Prototypes FNC – Future Naval Capabilities



Naval S&T Focus Areas

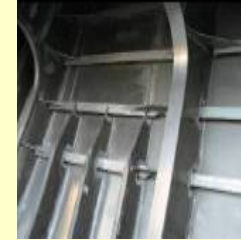
- Power and Energy
- Operational Environments
- Maritime Domain Awareness
- Asymmetric and Irregular Warfare
- Information, Analysis, and Communication
- Power Projection
- Assure Access and Hold at Risk
- Distributed Operations
- Naval Warrior Performance and Protection
- Survivability and Self-Defense
- Platform Mobility
- Fleet/Force Sustainment
- Affordability, Maintainability, and Reliability

A Revolution in Platform Capability

Ship-to-Ship Transfer & Material Handling



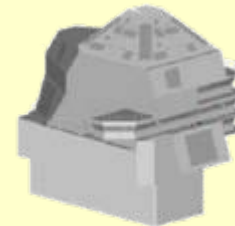
Structures & Affordability



Next Generation Integrated Power Systems



INtegrated TOPside



Launch and Recovery of Unmanned Vehicles

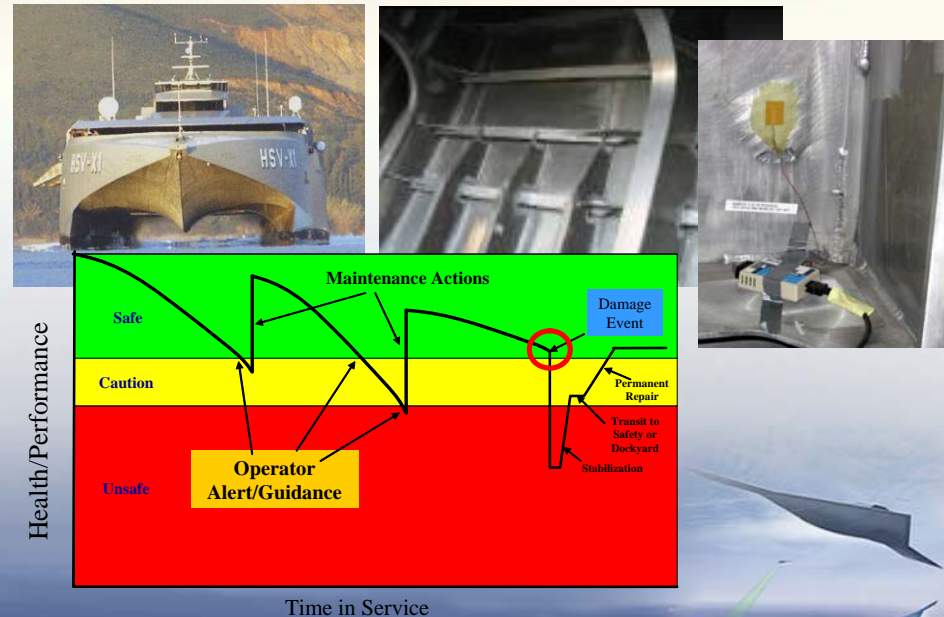
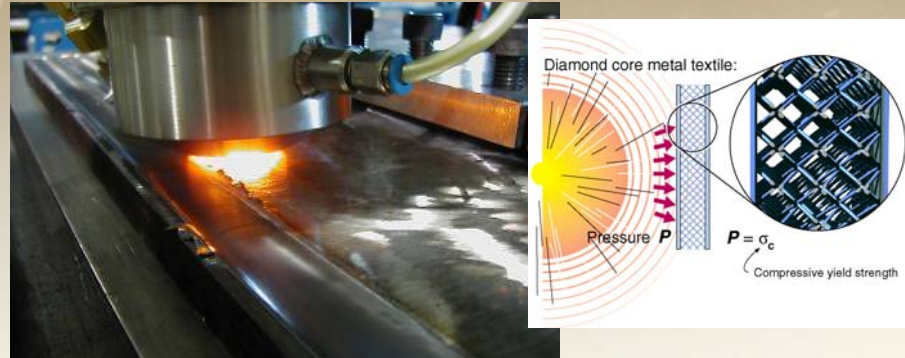


Fighting at the Speed of Light



Structures & Affordability

- **Low Cost, High-Strength Materials & Processes**
 - HSLA-65 Steel, Titanium, Marine-grade 10% Nickel Steel, Friction Stir Welding
- **Hull Structural Health Monitoring**
 - Aluminum, Composites, Unconventional Hullforms
 - Real-Time Feedback/ Monitoring, Service Life Prognoses



Next Generation Integrated Power Systems

Allows all Ship Systems to be Electrical

- Right Power, Right Place, Right Time
- Drive to increase capability at reduced fuel consumption

Power Density

Enabling
Technologies

- High Speed Generator
- Advanced propulsion motors
- Common power conversion

- Power and energy control
- Zonal ship service distribution
- Energy Storage

Electric Ship

Medium Voltage AC
Power Generation
(MVAC) 4-13.8 kVAC
60 Hz

High Frequency
Alternating Current
(HFAC) 4-13.8kVAC
200-400 Hz

- Power-dense generation
- Power-dense transformers
- Conventional protection

Medium Voltage
Direct Current (MVDC)
6 kVDC

- Reduced power conversion
- Eliminate transformers
- Advanced reconfiguration

Now

Near

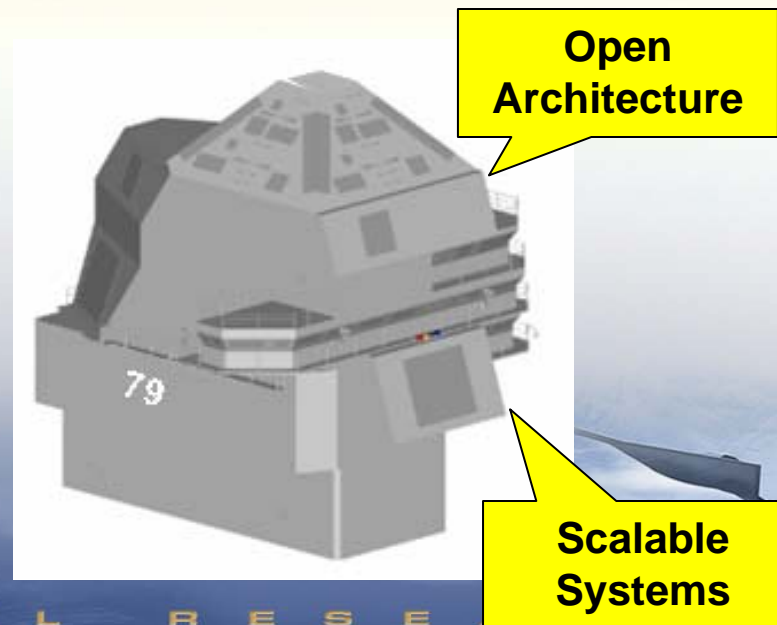
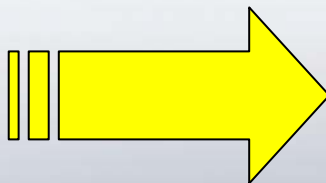
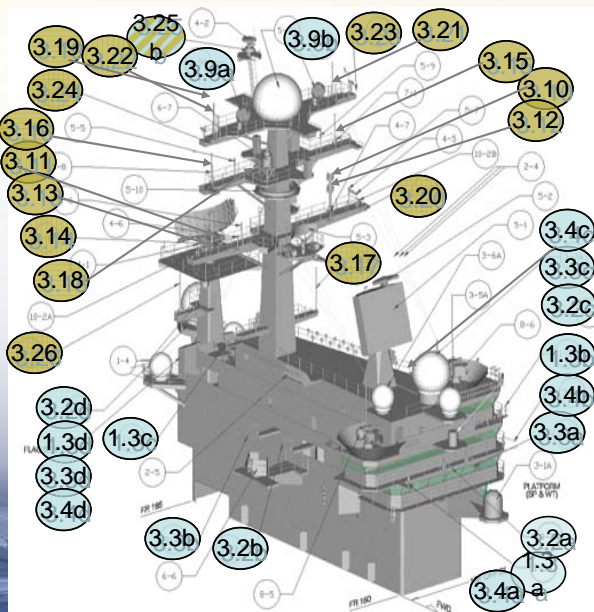
Future

“Directing the Future of Ship’s Power”

INtegrated TOPside

INTOP is a...

- Multi-function, multi-beam aperture that radically reduces the number of antennas required
- Scalable family of EW, RADAR (not high power) & communications capability to support multiple classes of ships
- Modular / open RF design (apertures and electronics) to facilitate best of breed technology and cost effective upgrades



Fighting at the Speed of Light & Hypervelocity

Free-Electron Laser

- High- energy laser defense system

Electromagnetic Railgun

- Pulsed-power system
- 10 rounds/minute
- 6 minute flight
- 200 nautical miles

Weapons of Mass Destruction Detection

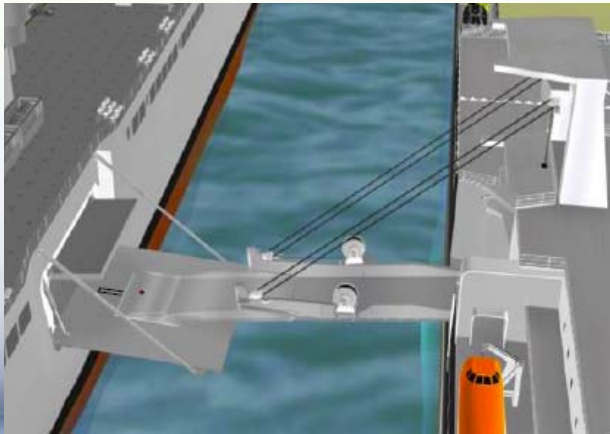
- Multiple detection methods
- Surveillance without boarding

Ship-to-Ship Transfer & Material Handling

Flexible, responsive afloat warehousing technology

- Enables improved ship-to-ship logistics
- Improves sustainment of assembled Naval forces
- Reduces response times to humanitarian mission requirements

*Interface Ramp
Technologies*



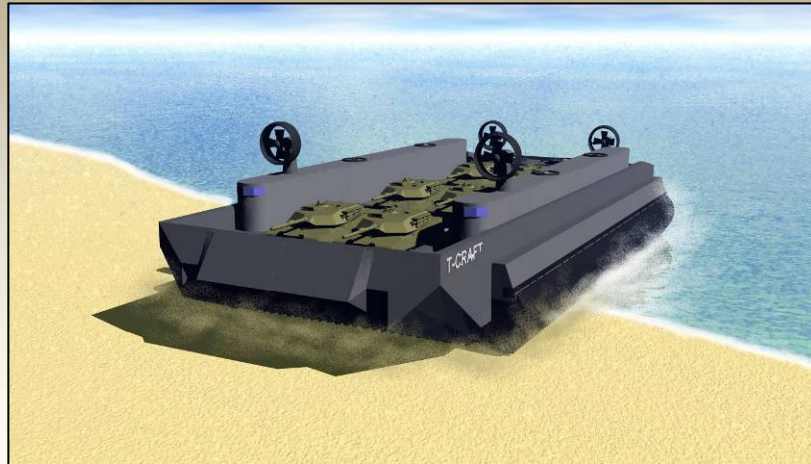
*Large Vessel Interface
Crane Technology*



*High Rate
Vertical/Horizontal
Material Movement*



T-Craft Challenges



Problem:

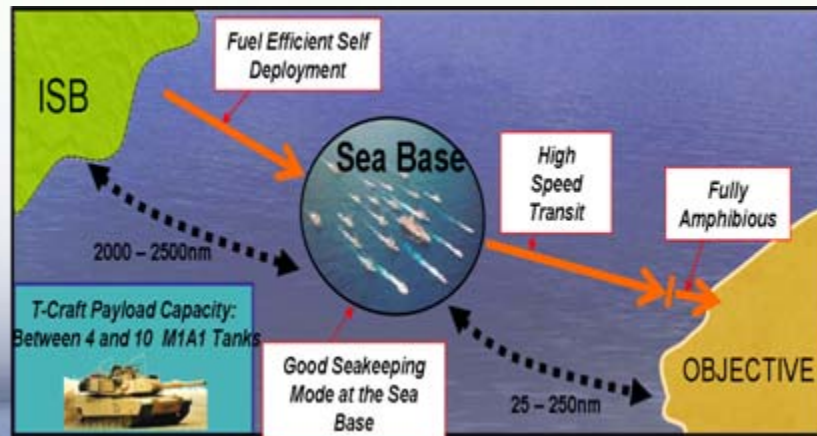
Current Navy surface connectors have to be carried into theater within the well decks of our Amphibious ships. These Amphibious connectors carry small payloads over small distances and can only operate in low sea states.

Challenges:

- Self deploying over a long distance in high sea state unloaded
- Significantly higher payloads (4 to 10 times)
- Fully loaded unrefueled range >500nm at 40kts
- Cargo Transfer at the Sea Base in high sea states
- The ability to traverse sand bars and mud flats
- Fully amphibious landing capability

Technical barriers:

- Transition of Propulsion systems from in-water to out-of-water
- Variable/retractable skirt geometry
- High strength, lightweight, long-wear materials
- Active ride control systems
- Human system integration
- Vehicle transfer at the sea base
- Complexity of mechanical drive system
- Hybrid electric drive options
- Lightweight structural materials



Launch and Recovery of Unmanned Vehicles

High-level Autonomy

- Dynamic mission planning/re-planning
- Advanced perception, vision-guided maneuvers
 - Obstacle avoidance
 - High Sea State Launch/Recovery

Autonomous Approach



Auto - Latch





ONR

Revolutionary Research . . . Relevant Results



The Ship Acquisition Process Status and Opportunities

*NDIA
Expeditionary Warfare Conference*

*Mr. Art Divens
Program Executive Office, Ships*

21 Oct 08



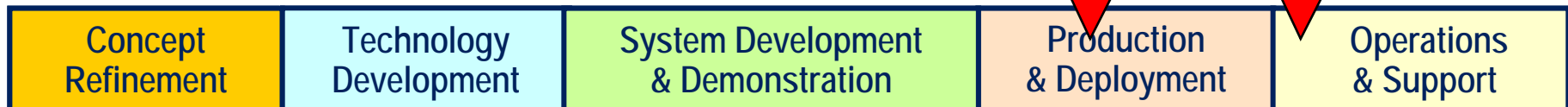
San Antonio (LPD 17) Class Today

- **Class Capabilities**

- Flight deck accommodates Marine Corps helicopters and MV-22 Osprey tilt-rotor aircraft
- Well deck can launch and recover air-cushioned landing craft and amphibious vehicles

- **Program Status**

- *San Antonio* (LPD 17) Delivered Jul 05, *New Orleans* (LPD 18) Delivered Dec 06, *Mesa Verde* (LPD 19) Delivered Sep 07, *Green Bay* (LPD 20) Delivered Aug 08
- *New York* (LPD 21) christened March 08, *San Diego* (LPD 22) keel laid May 07, *Anchorage* (LPD 23) keel laid Sep 07, *Arlington* (LPD 24) started fab. Aug 07, *Somerset* (LPD 25) option exercised Dec 07, LPD 26 (*unnamed*) \$50M AP in FY08
- LPD 17 on maiden deployment, LPD 18 deploys next year, LPD 19 completed shock trials



• Class Capabilities

- LHD 8 (USS Makin Island) is the last ship of the LHD class
 - Hybrid gas turbine/diesel-electric propulsion
- LHA 6 (USS America) is a new class of ship designed for expanded aviation capabilities
 - Expanded aviation capabilities (12 MV-22s, 4 CH-53's, 4 AH-1s, & 6 F-35Bs)



• Program Status

- Both ships are being built by Northrop Grumman in Pascagoula
- LHD 8 scheduled to deliver in FY09
- LHA 6 construction contract awarded June 07; Start Fab scheduled for Dec 08



Lewis And Clark (T-AKE 1) Class Today

• Class Capabilities

- As a dry cargo and ammunition ship, T-AKE will directly contribute to the ability of the Navy to maintain a forward presence.
- Primary mission roles
 - Provide logistic lift from sources of supply such as friendly ports, or at sea.
 - Transfer cargo at sea to station ships and other naval warfare forces.

• Program Status

- T-AKE 1 Delivered June 06, T-AKE 2 Delivered Feb 07, T-AKE 3 Delivered July 07, T-AKE 4 Delivered Nov 07, T-AKE 5 Delivered Jun 08
- T-AKE 6-9 are being built by General Dynamics/ National Steel and Shipbuilding Company in San Diego, CA
- Material has been ordered for T-AKE 10-11



MPF(F) Squadron Composition



Auxiliary Cargo and Ammunition Ship
MPF (F) T-AKE

3



Mobile Landing Platform
MPF (F) MLP

3



General Purpose Amphibious Assault Ship Replacement
MPF (F) LHA(R)

2



Multipurpose Amphibious Assault Ship
MPF (F) LHD

1



Large Medium Speed Roll-on, Roll-off Ship
MPF (F) LMSR

3



Legacy Sealift Ships (Dense Pack)
T-AK

2

Increment One:

- Surface employment of combat ready forces
- Persistent sustainment from the sea

Increment Two:

- Vertical employment and command and control

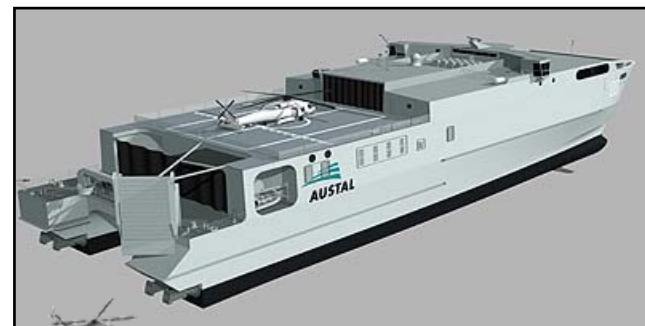
Increment Three:

- Prepositioning
- At sea arrival and assembly

Joint High Speed Vessel (JHSV)

• Program Capability

- High speed lift ship capable of transporting cargo and personnel across intra-theater distances
- Can transport combat ready personnel and equipment
- Can offload in austere ports without reliance on infrastructure
- Phase One preliminary design contracts awarded Jan 08 to Austal, Bollinger and BIW



• Program Status

- Detail Design and Construction contract for 1 ship with nine options scheduled to be awarded next month



• Program Capability

- Provides afloat, in-theater command and control capability to support a command staff's presence, persistence and speed of decision. Mitigates reach back and infrastructure vulnerabilities during operations
- Supports the full range of missions and functions of an afloat Maritime Headquarters with Maritime Operations Center in support of forward deployed Fleet Commanders, JFMCC or CJTF
- Replaces LCC 19 and LCC 20

• Program Status

- Start of AoA approved 22 Sep 08 to study options including T-AKE and LPD 17
- ICD approved by JROC on 17 Jul
- Program has been renamed from JCC(X) to LCC(R)



Concept
Refinement

Technology
Development

System Development
& Demonstration

Production
& Deployment

Operations
& Support

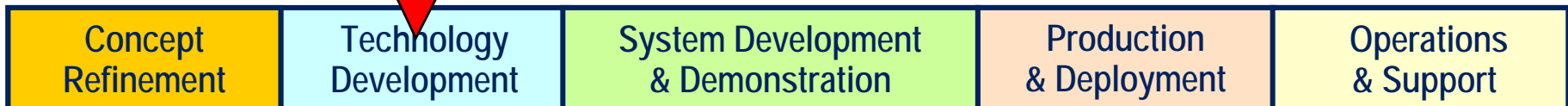
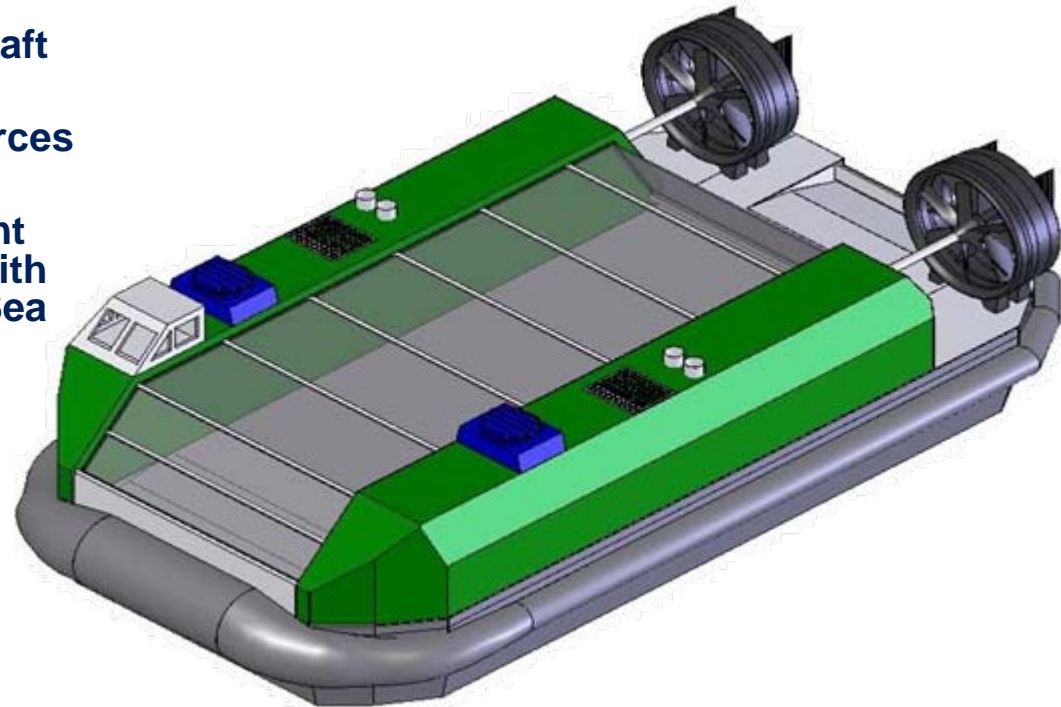
Joint Maritime Assault Connector

• Program Capability

- Intended to replace the current LCAC
- The in-service LCAC start to reach end of service life in FY14 and the inventory begins to fall below the existing 72 craft requirement
- Support rapid movement of USMC forces from the sea base over the beach
- Provide greater capability than current LCAC (designed to transport M1A1 with mine plow from 25 nautical miles in Sea State 3/4)
- ICD JROC Approved in Oct 2006

• Program Status

- AoA approved
- Milestone A Decision in progress
- Capabilities Development Document (CDD) anticipated early FY09
- Milestone B Decision anticipated by end of FY10



Reducing costs key to achieving goals



Program Executive Office, Ships

- **Maintain mature, steady-state production**
 - Most programs already serial production – LPD, T-AKE
- **Reuse existing military and commercial designs**
 - LCC(R), MPF(F), JHSV
- **Understand capability trades**
 - LHA 6 – well deck vs. expanded aviation support
- **Leverage commercial standards**
 - T-AKE, JHSV
- **Use Fixed-Price Contracts when possible**
 - T-AKE, JHSV, LPD 21 and out
- **Partner with Industry to reduce costs**



13th Annual Expeditionary Warfare Conference Requirements Generation

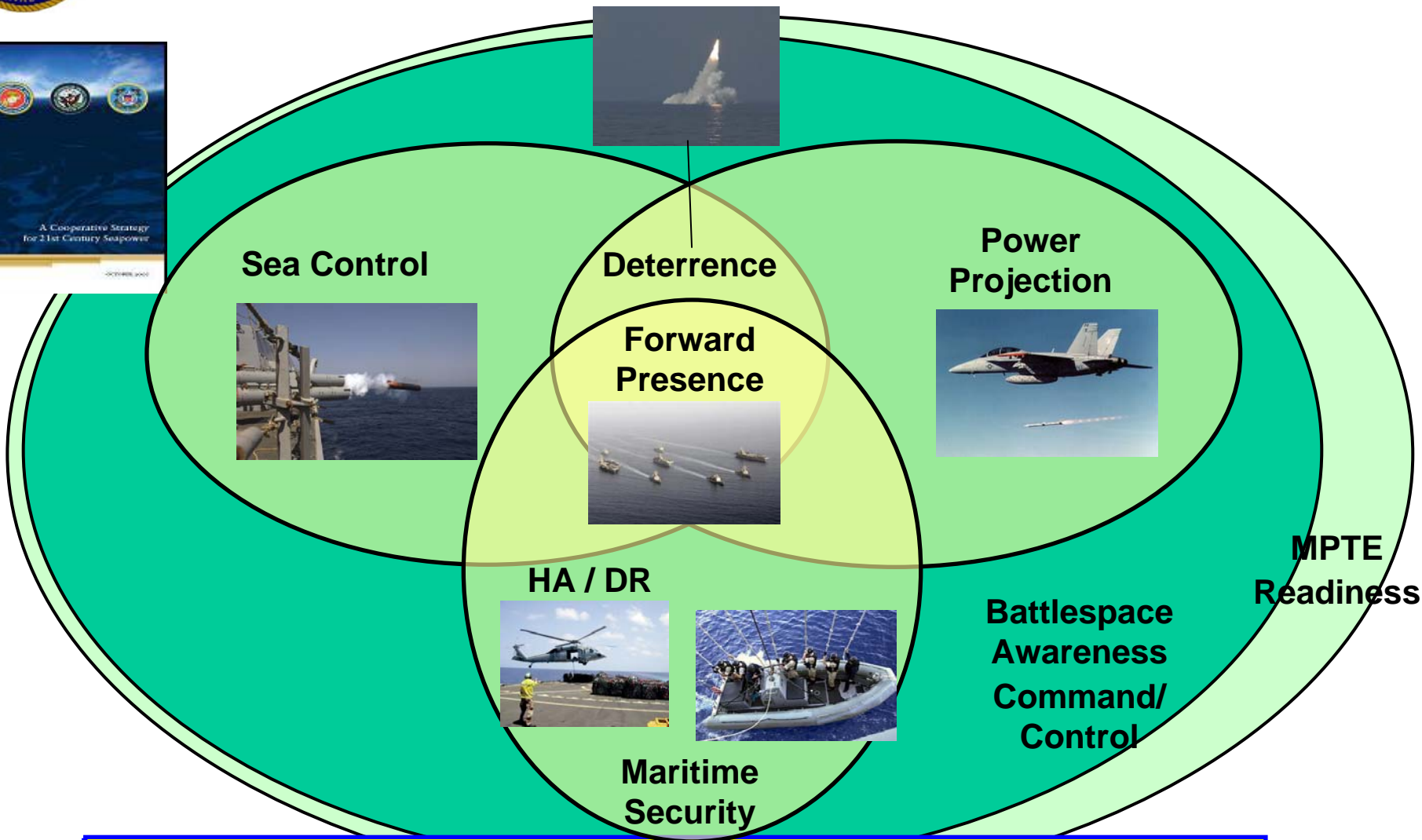
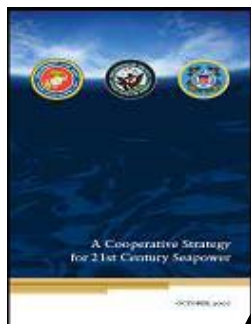


CAPT Buz Sorce
Deputy, Surface Ships
October 21, 2008

UNCLAS



Maritime Strategy Foundation



All Missions are enabled by BA, C2, MPTE, and Readiness



Balancing Act



- Build the right force
- Control appetite

***Providing the right capability at the right cost
to execute the MARSTRAT***



Marine Corps Shipbuilding Requirements

BGen Walter L. Miller, USMC

Assistant Deputy Commandant

Combat Development and Integration

Headquarters, U.S. Marine Corps

21 October 2008



Marine Corps Shipbuilding Requirements



- **Warfighting.** Attain a minimum 33 ships (11/11/11) to generate 30 Ao for 2.0 MEB AE, plus one MPF(F) MEB to support forward presence, power projection, and execute JFEO in support of "How We Fight."
- **Incremental LPD-17.** Designate LPD-17 hull form for LSD replacement.
- **LH(X) Right.** Truncate the LHA(R) no well deck big deck at two ships and assess big deck surface interface requirements to get LH(X) right.
- **1.0 MPF(F) MEB.** Attain full MPF(F) squadron capabilities and ship mix to enable 1.0 MEB vertical and surface reinforcement for MEF-level fight from the seabase.
- **NSFS.** Carefully execute and monitor Analysis of Alternatives and assess all hull forms to meet NSFS requirements.

GENERAL DYNAMICS

Affordability in Shipbuilding

M. W. Toner

October 21, 2008

Summary of Key Points

- **Describe the Design Build Process and its impact on affordability**
- **Describe actions to facilitate affordability**
 - Design Build
 - Collaborative environment
- **Examples**
 - VIRGINIA – Cost Plus
 - T-AKE – Fixed Price
 - Commercial Ships – Fixed Price



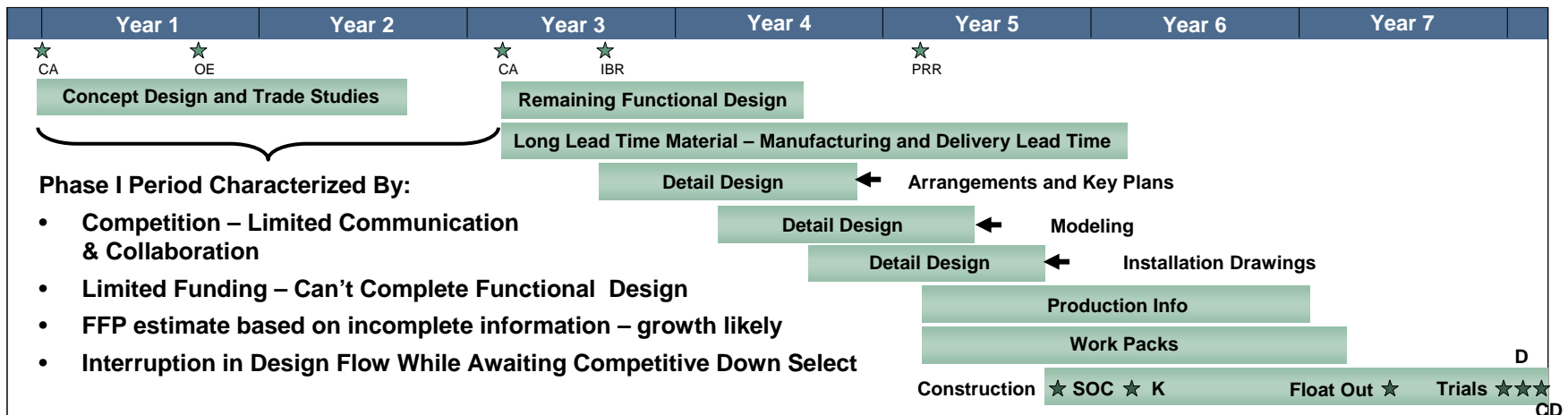
Design-Build Objectives

- Design high quality, low cost, mission-ready ships which meet the operational requirements of the Navy
- Establish a cost effective process that ensures the design is complete, material is available and work packages are developed prior to construction start
- Develop a cost effective ship construction plan
 - Increase Modularization
 - Reduce construction labor and cost – Goal: Achieve 3rd ship learning curve on the lead ship
 - Reduce design changes identified by trades during construction



Traditional Acquisition Strategy

Limited Collaboration, Maximum Cost and Schedule Risk



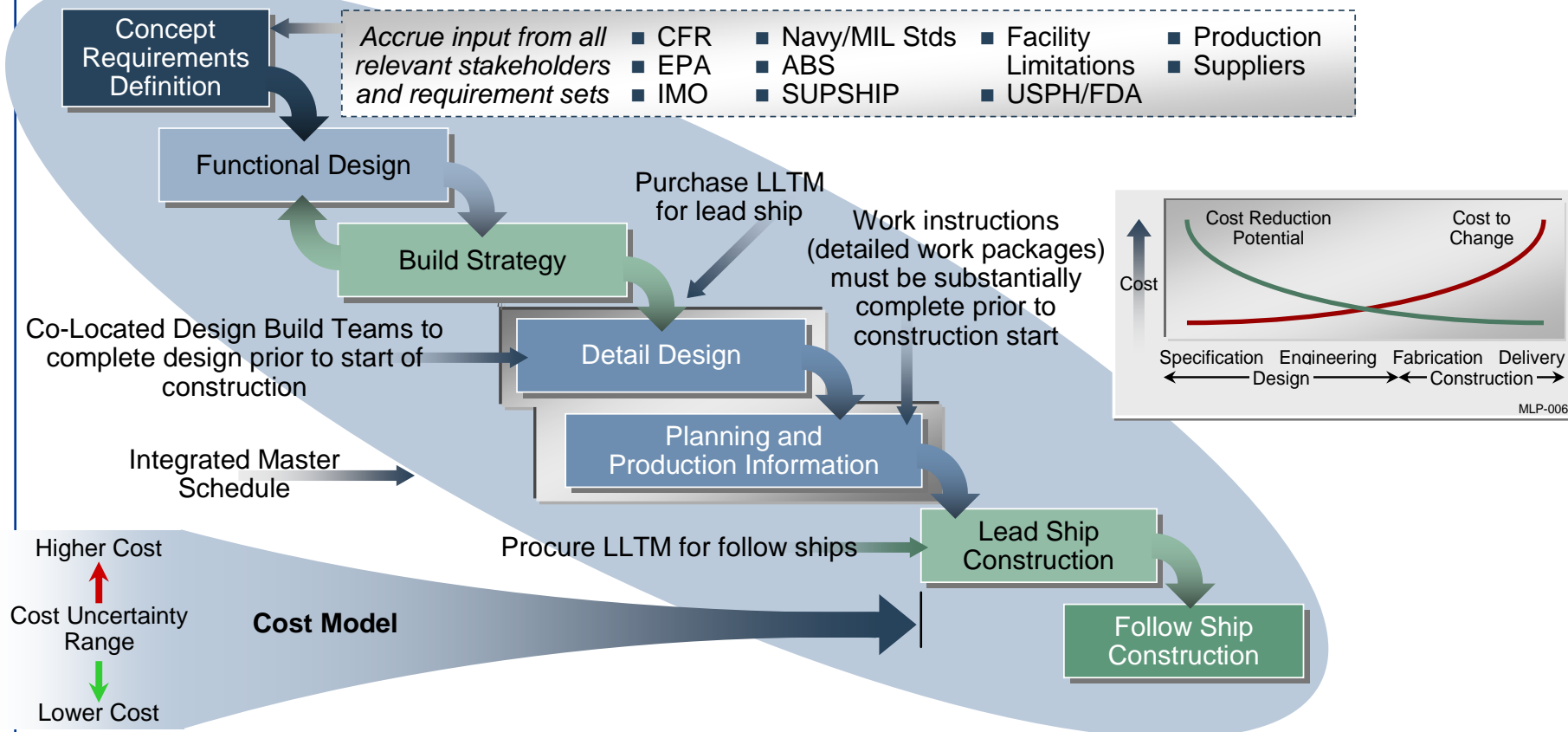
● Phase II Period Characterized By:

- End of competition typically results in significant design changes
 - Impacts schedule – causes shipbuilder to revisit early decisions, delays detail design
 - Impacts cost performance – Phase II FFP bid inadequate, shipbuilder financial risk
- Must expedite functional design to start detail design and support LLTM Order
 - World shipbuilding boom – LLTM in excess of 32 months
 - Forces design decisions that fail to optimize total cost
- Significant Overlap between functional and detail design – rework
- Significant Overlap between detail design and start of construction
 - Lack of a mature design at SOC results in poor cost and schedule performance
 - Build strategy is sub-optimized – construction sequence is sacrificed

Design Build Acquisition Strategy

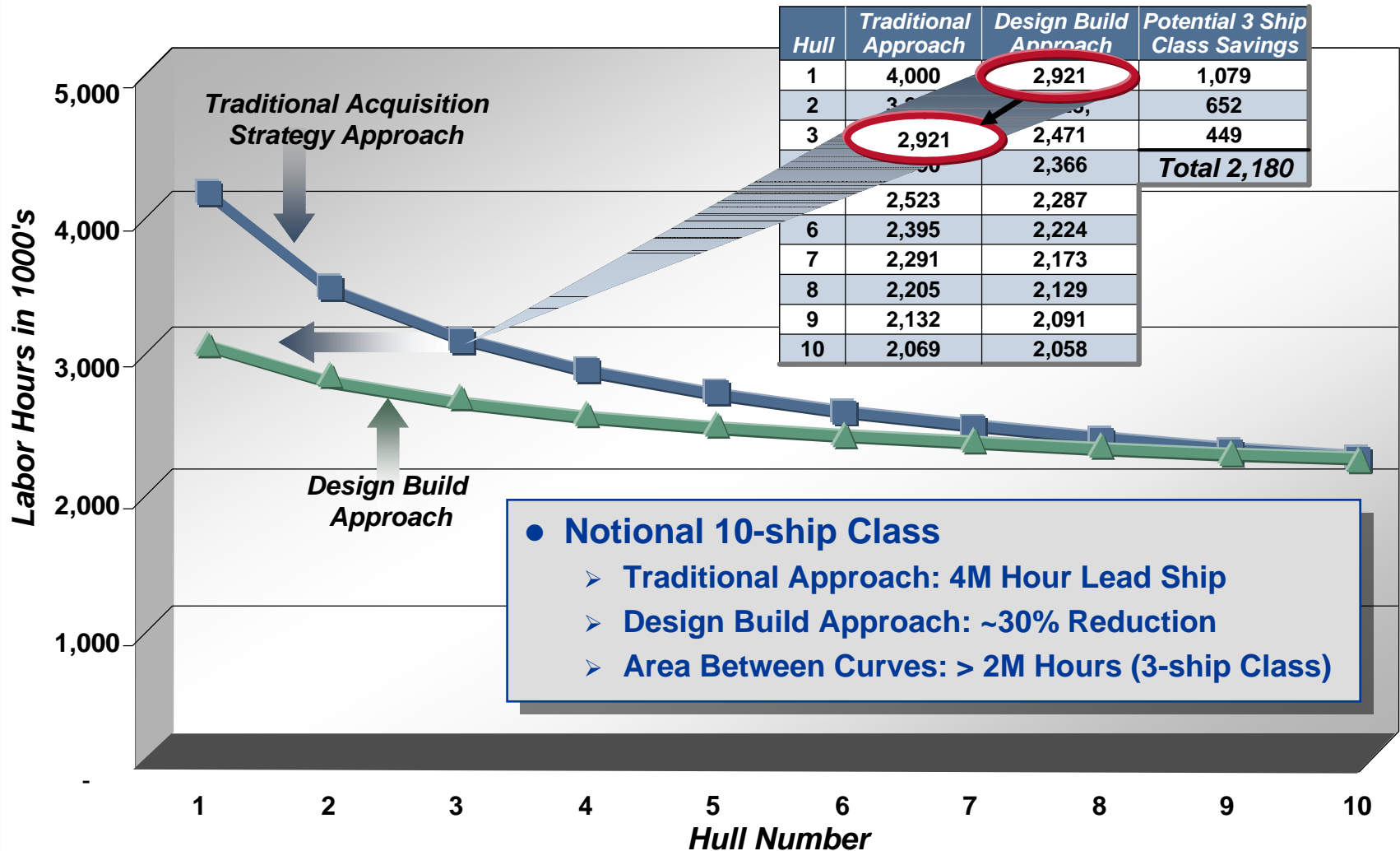
Establishes Potential for Success

- **For US Shipbuilding to be affordable, a paradigm shift must take place**
 - Create Govt/Shipbuilder partnership early enough to maximize impact of collaboration and design for producibility considerations in future shipbuilding programs



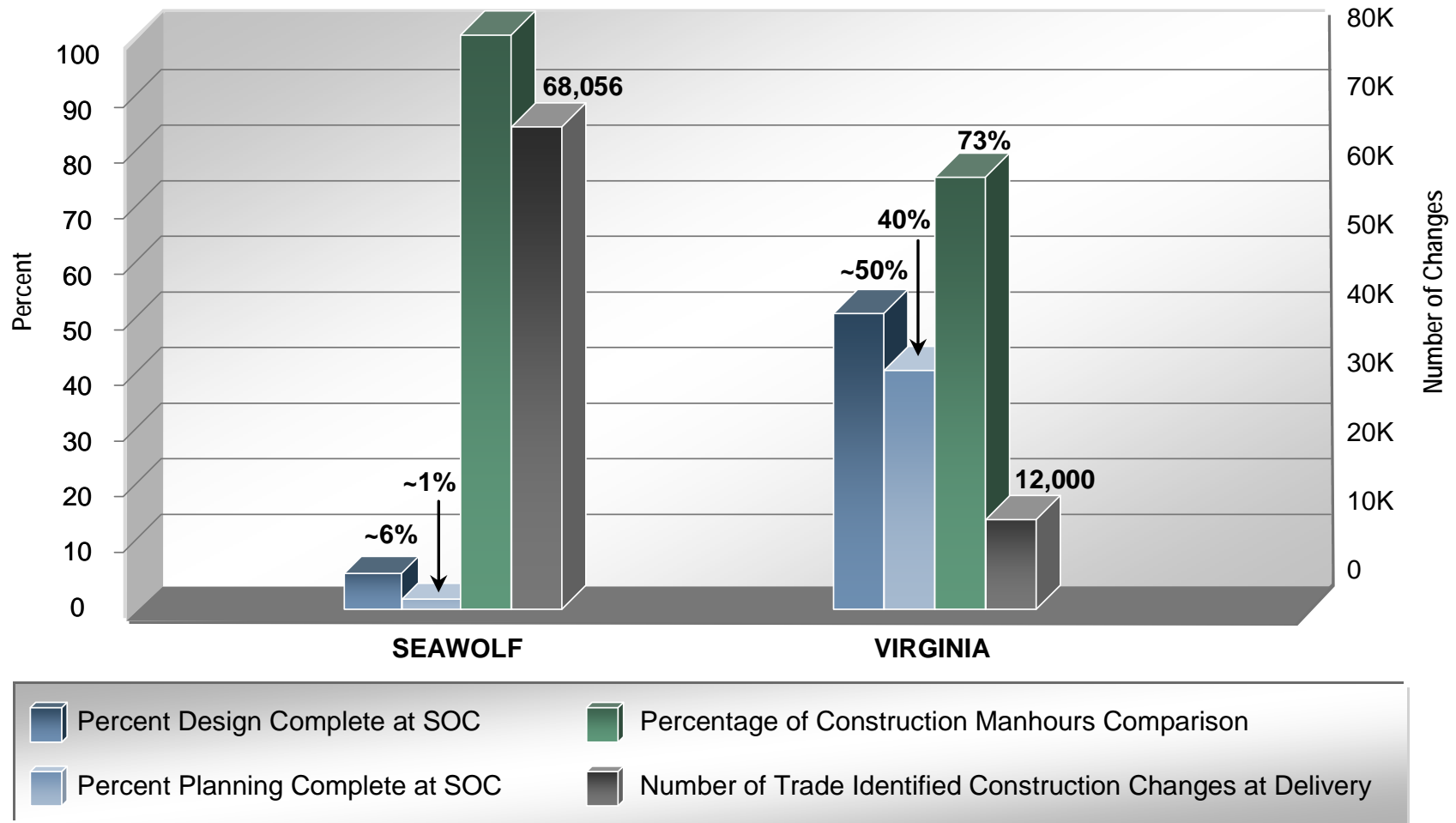
Traditional Versus Design Build Approach

Lead Ship at Third Ship Cost



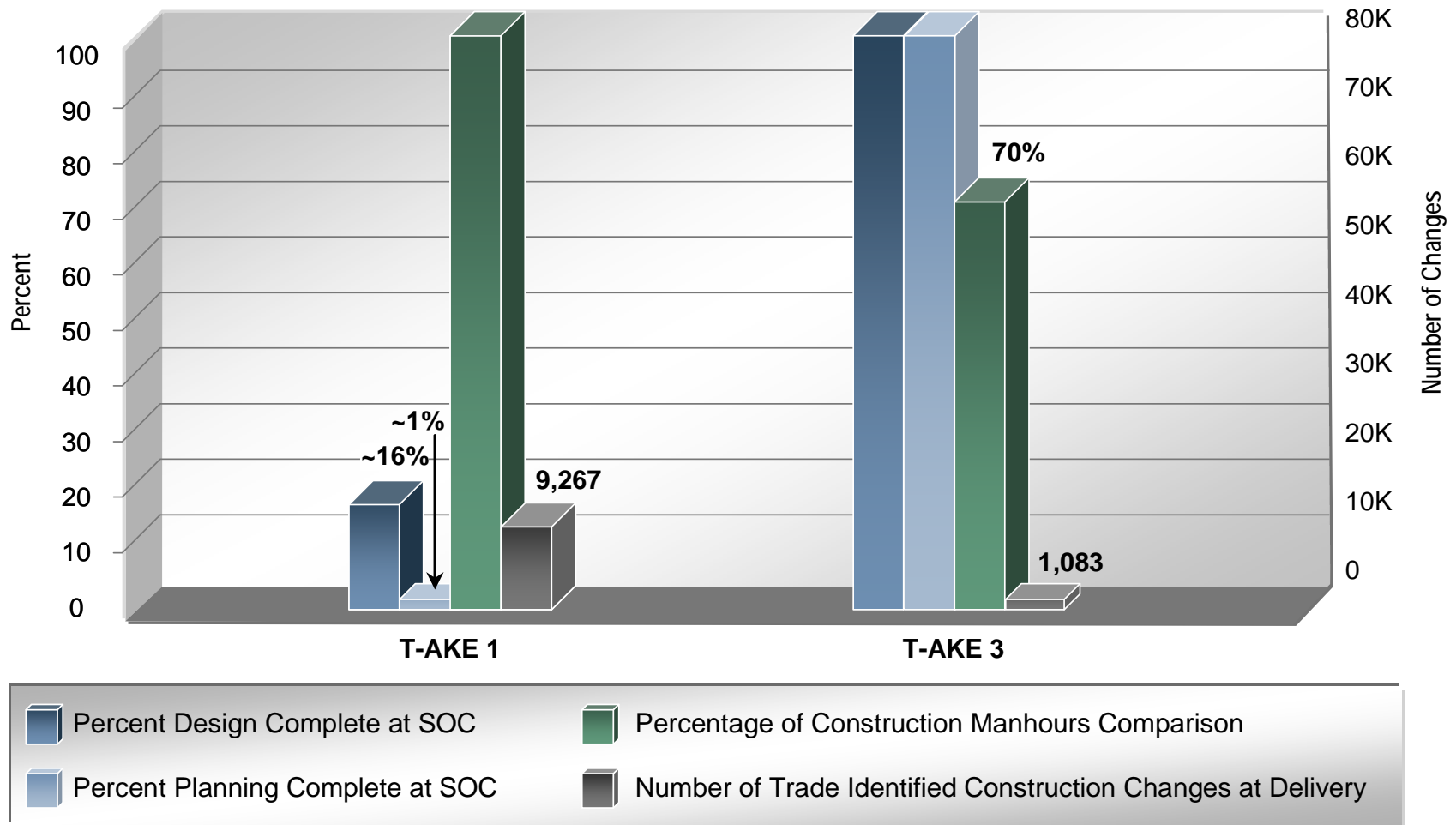
Design Build in Practice

SEAWOLF and VIRGINIA Submarine Programs



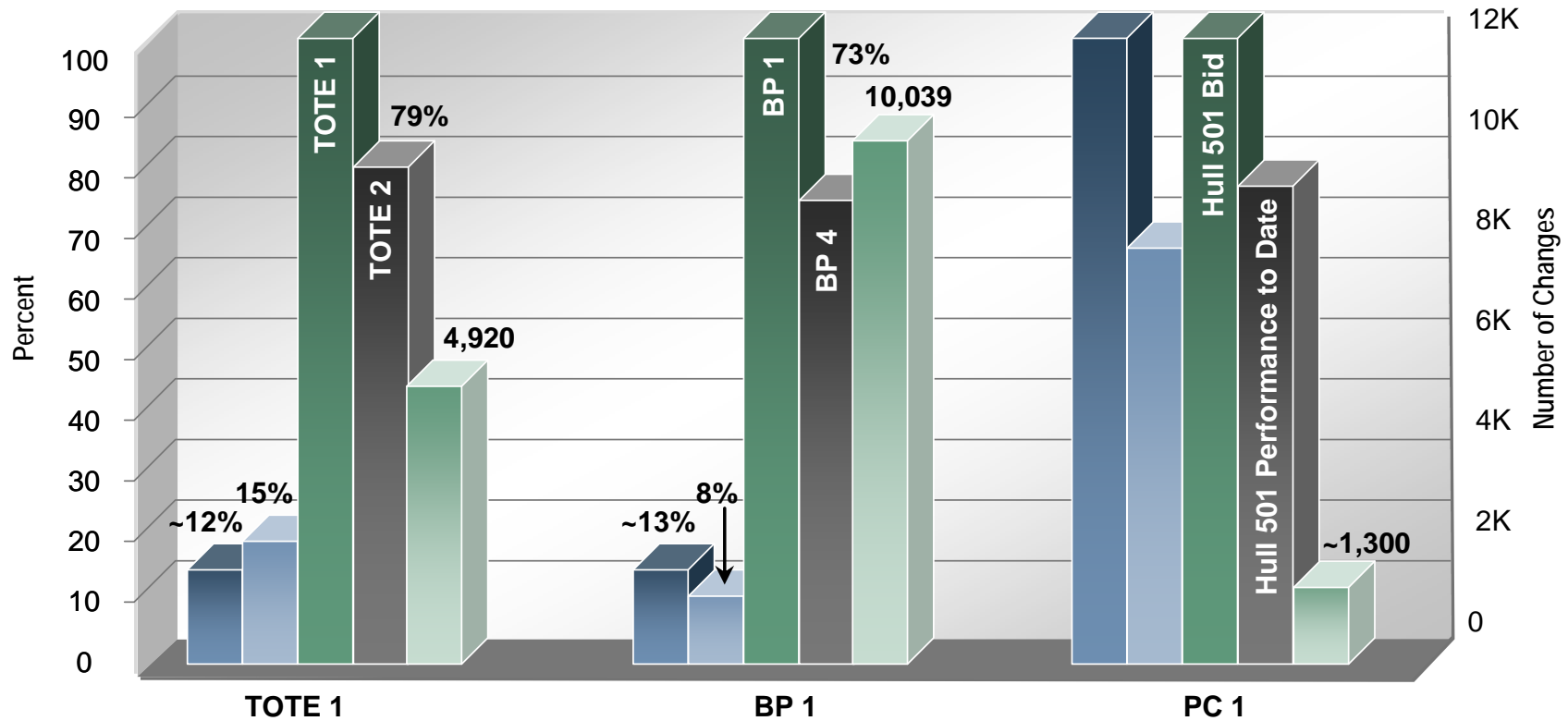
Design Maturity at SOC Reduces Cost

T-AKE 3 Represents a 30% Reduction in Cost



Design Maturity at SOC Reduces Cost

Commercial Shipbuilding Examples



■ Percent Design Complete at SOC

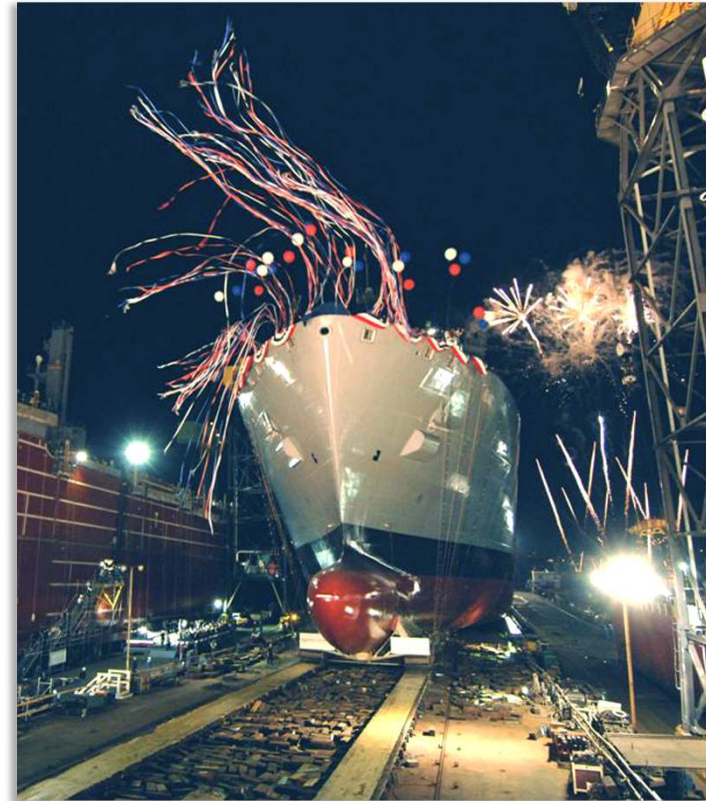
■ Percent Planning Complete at SOC

■ Percentage of Construction Manhours Comparison

■ Number of Trade Identified Construction Changes at Delivery

Conclusions

- **The Government/Shipbuilder Team must Change the Navy Acquisition Strategy to Achieve the Desired Outcome**
 - Realistic Cost Estimating
 - Predictable Schedule Performance
 - High Quality, Mission Ready Ships
- **Shipbuilder Focus:**
 - Early Requirements Definition
 - Early Functional Design Completion
 - Work Paper ready at SOC
- **Government Focus:**
 - Short Competition for Good Ideas
 - Maximize Opportunities for Collaboration Before the Start of Detail Design
- **Design-Build Represents the Way Ahead – Results are Well Established**
 - VCS Program – 27% reduction in lead ship labor hours
 - PC-1 Program – Lead ship on schedule, under budget, minimal design change



21st Century Expeditionary Warfare: Expeditionary Warfare Conference

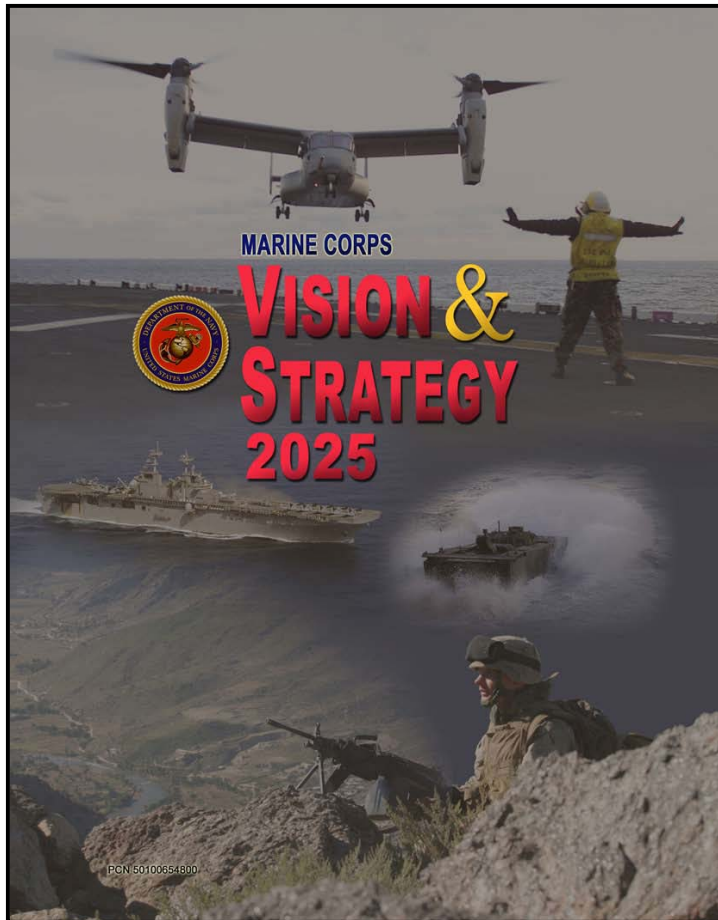


***LtGen George Flynn
Oct 21, 2008***

Hybrid threats, blurring character of conflict, complex environments



Marine Corps Vision & Strategy 2025



The Nation's "Force in Readiness"

- Confirms:
 - Who we are
 - What we believe
 - What we do
- Foundation for operational concepts; sets our future direction
- Reaffirms our legislated role
- Grounded in our identity, ethos, values, and competencies
- Focuses efforts and investments

"This document details my vision of the future Corps and a plan for creating the Marine Corps of 2025" Gen James T. Conway





Presence

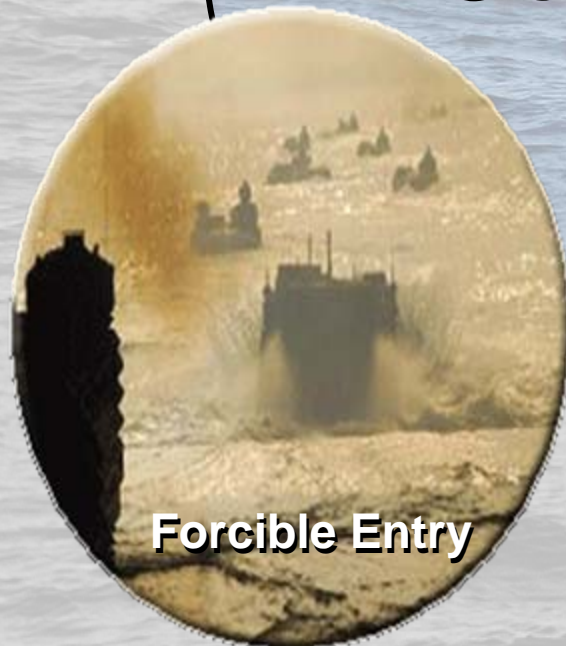


Combined Arms



Detachments

Core Competencies



Forcible Entry



Complex Operations



Joint & Multinational



NDIA 13th Annual Expeditionary Warfare Conference

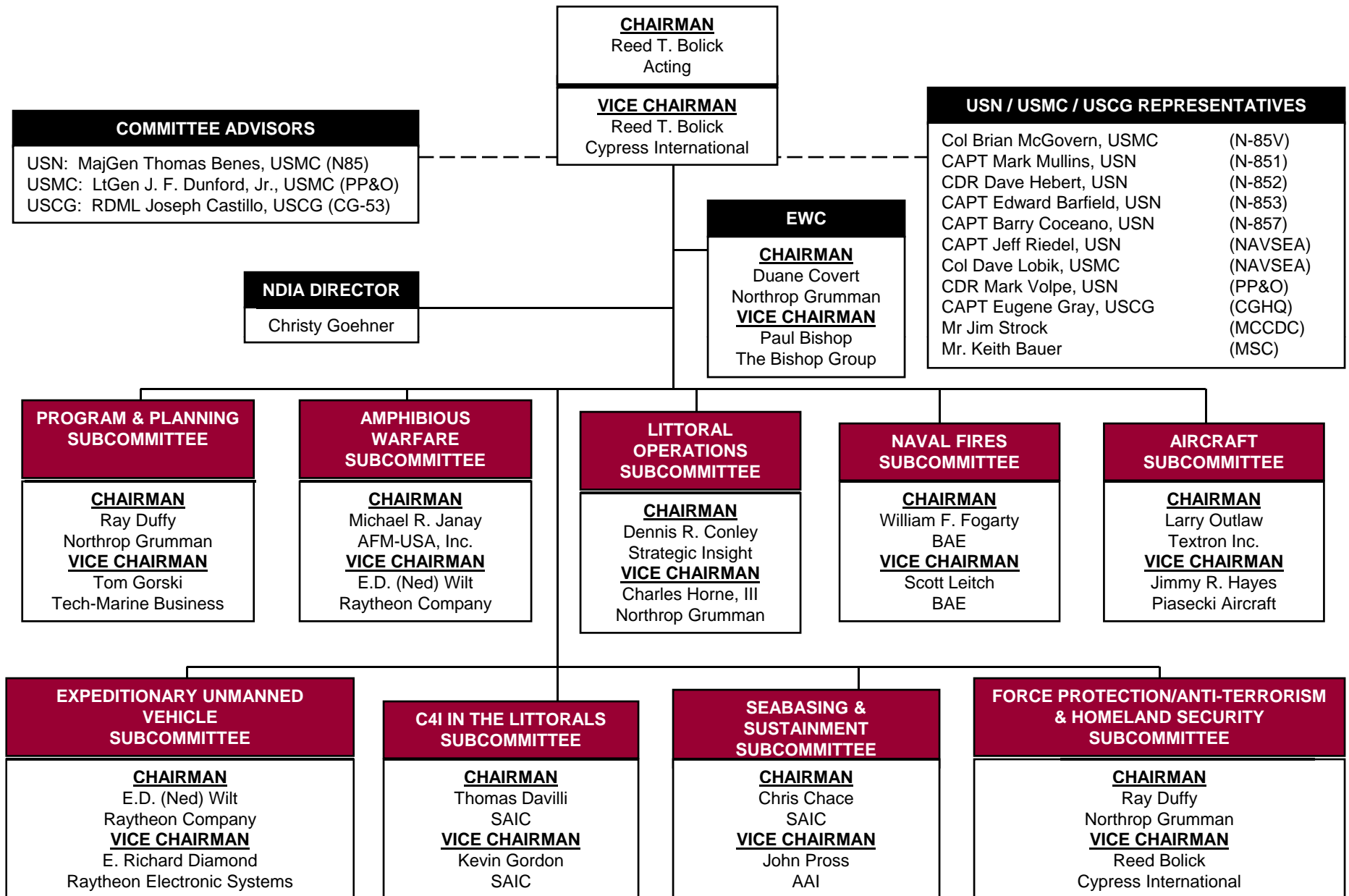
Welcome Aboard!

21 October 2008

*CAPT Andrew Buduo III
Commander*

*Dr. Delbert C. (Ace) Summey
Technical Director*

NDIA EXPEDITIONARY WARFARE DIVISION(EWD)





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NECC Battlespace

Adaptive, Expeditionary, Rheostat Capacity





“USMC Strategy for the Long War”

Brigadier General Johnson
Director of Operations

22 October 2008



MAGTFS ACROSS THE RANGE OF MILITARY OPERATIONS

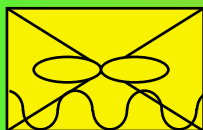
**Partner and Prevent,
Persistent Presence**

**Crisis Response and Limited
Contingency Ops**

**Forcible Entry and Major
Operations and Campaigns**

**Train,
Advise, &
Assist
Teams**

**Dets, Platoons &
Companies**

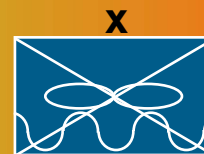


**SP MAGTF
SC MAGTF
Task
Organized**



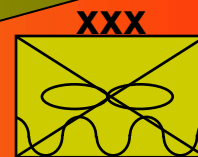
**MEU
~2,200
personnel**

- Battalion (Rein)
- Composite Sqdn
- Combat Log Bn



**MEB
14,000 – 17,000
personnel**

- Regiment (Rein)
- Marine Air Group
- Combat Log Regiment



MEF

**40,000 – 80,000+
personnel**

- Divisions
- Wings
- Marine Log Groups

Multicapable

**“Two - Fisted
Fighter”**

Across the ROMO

Joint / Multinational Operations and Interagency Activities

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MAGTFs CAPABILITIES



Partner and Prevent

Crisis Response and Limited
Contingency Ops

Forcible Entry and Major
Operations and Campaigns



*Theater Security
Cooperation*



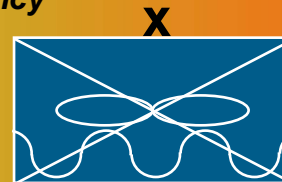
*Noncombatant
Evacuation
Operations*



Counterinsurgency



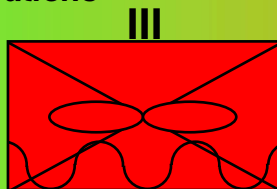
Marine Expeditionary Force



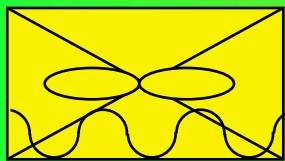
Marine Expeditionary Brigade



Sustained Combat Ops



Marine Expeditionary Unit



*Security Cooperation
Special Purpose
MAGTFs*



*Humanitarian Assistance
Disaster Relief*



Joint Forcible Entry



Multicapable

**"Two - Fisted
Fighter"**

**Across the Range
of Military Operations**

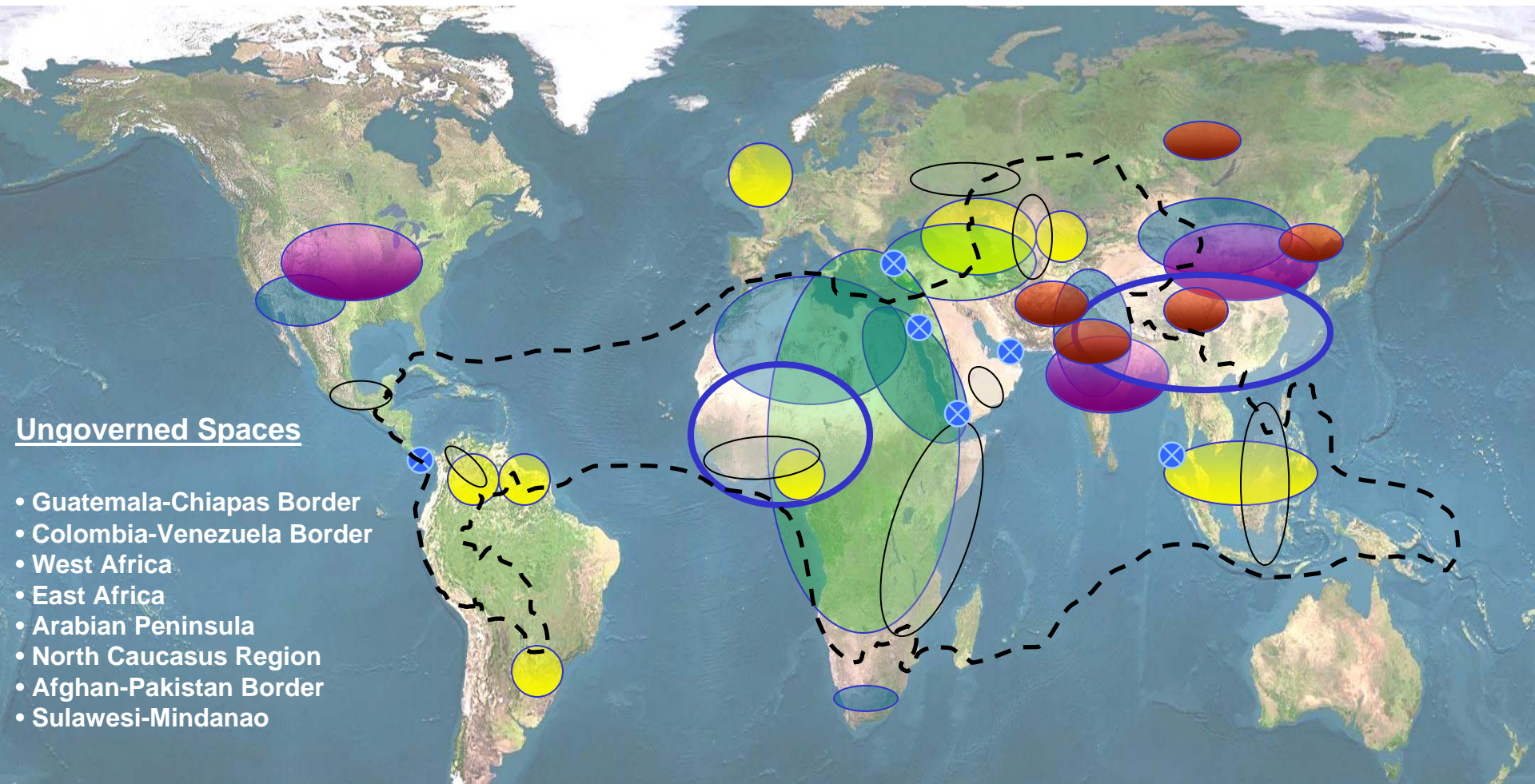
Integrated with Combatant Commander Theater Campaign Plans



UNCLASSIFIED

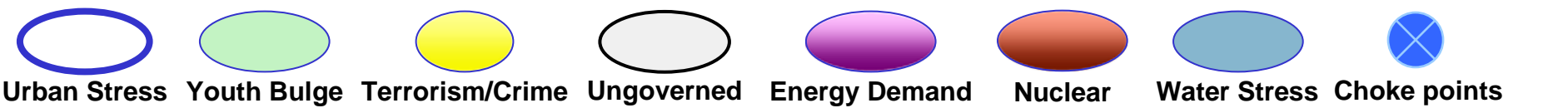
ARC OF INSTABILITY

SOURCES OF STRESS, INSTABILITY & CONFLICT



Ungoverned Spaces

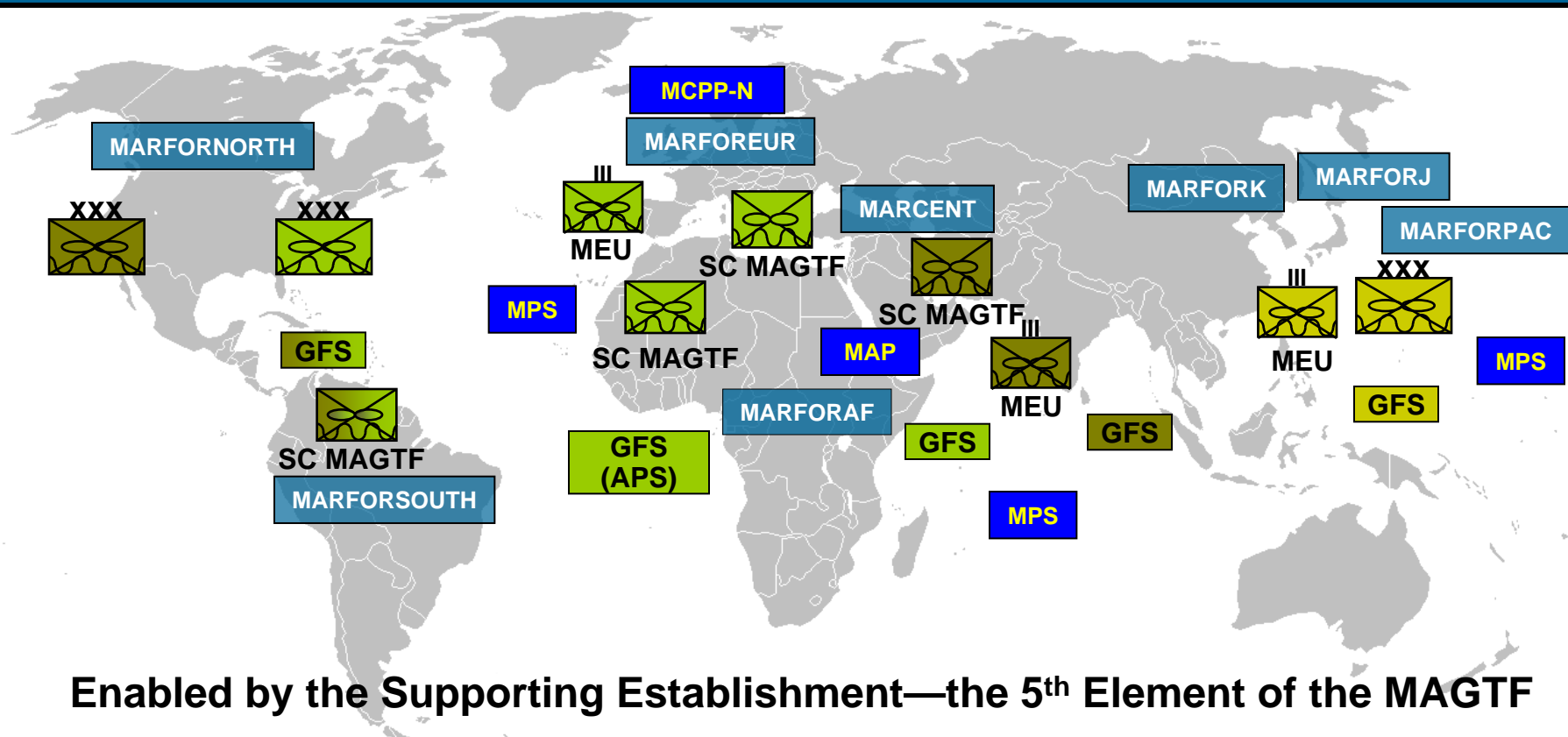
- Guatemala-Chiapas Border
- Colombia-Venezuela Border
- West Africa
- East Africa
- Arabian Peninsula
- North Caucasus Region
- Afghan-Pakistan Border
- Sulawesi-Mindanao





USMC FORWARD DEPLOYED

Complementary to a Joint, Combined, Whole of Government Approach



Enabled by the Supporting Establishment—the 5th Element of the MAGTF

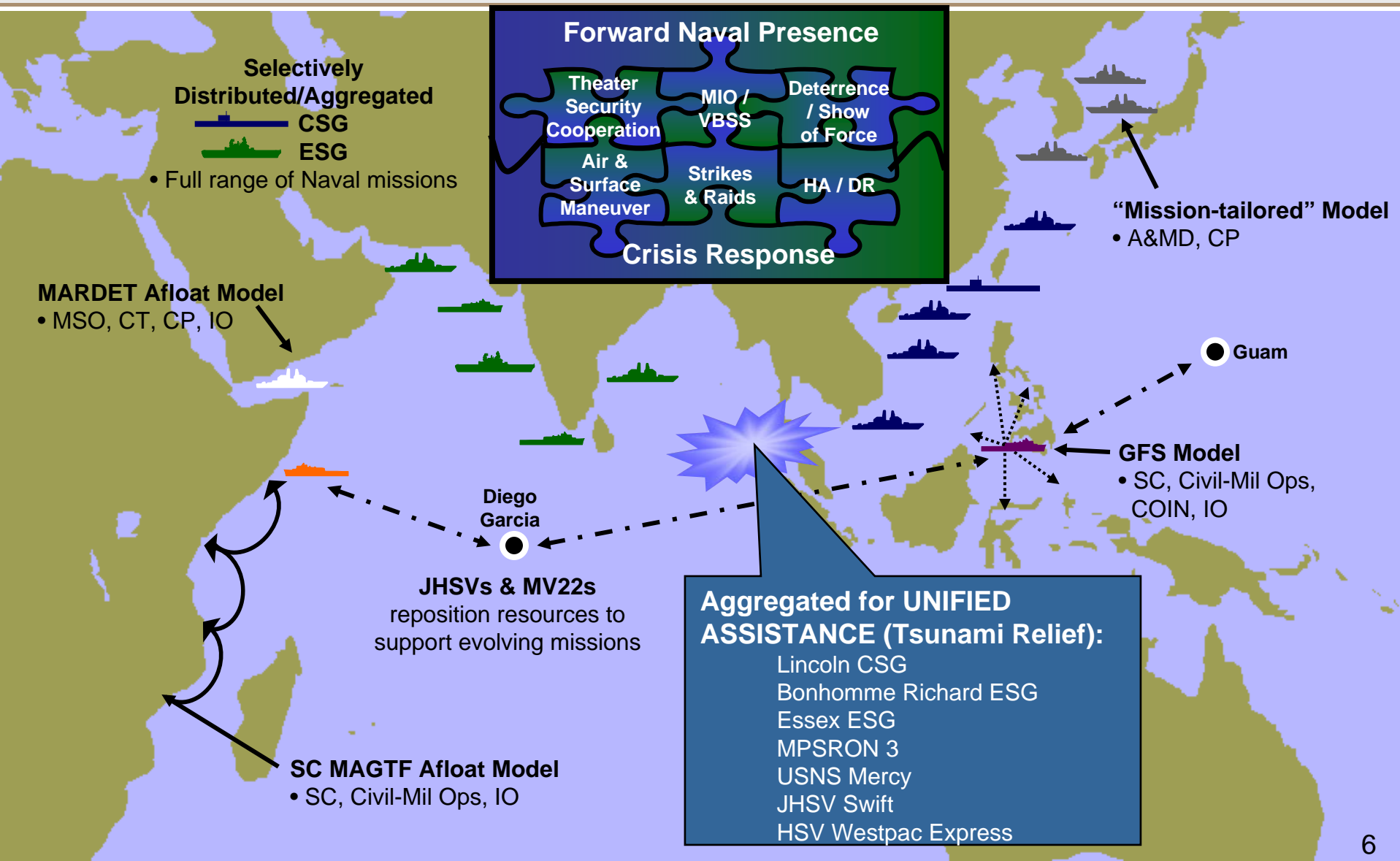
Reservoir of capability, task organized to support the CCCR



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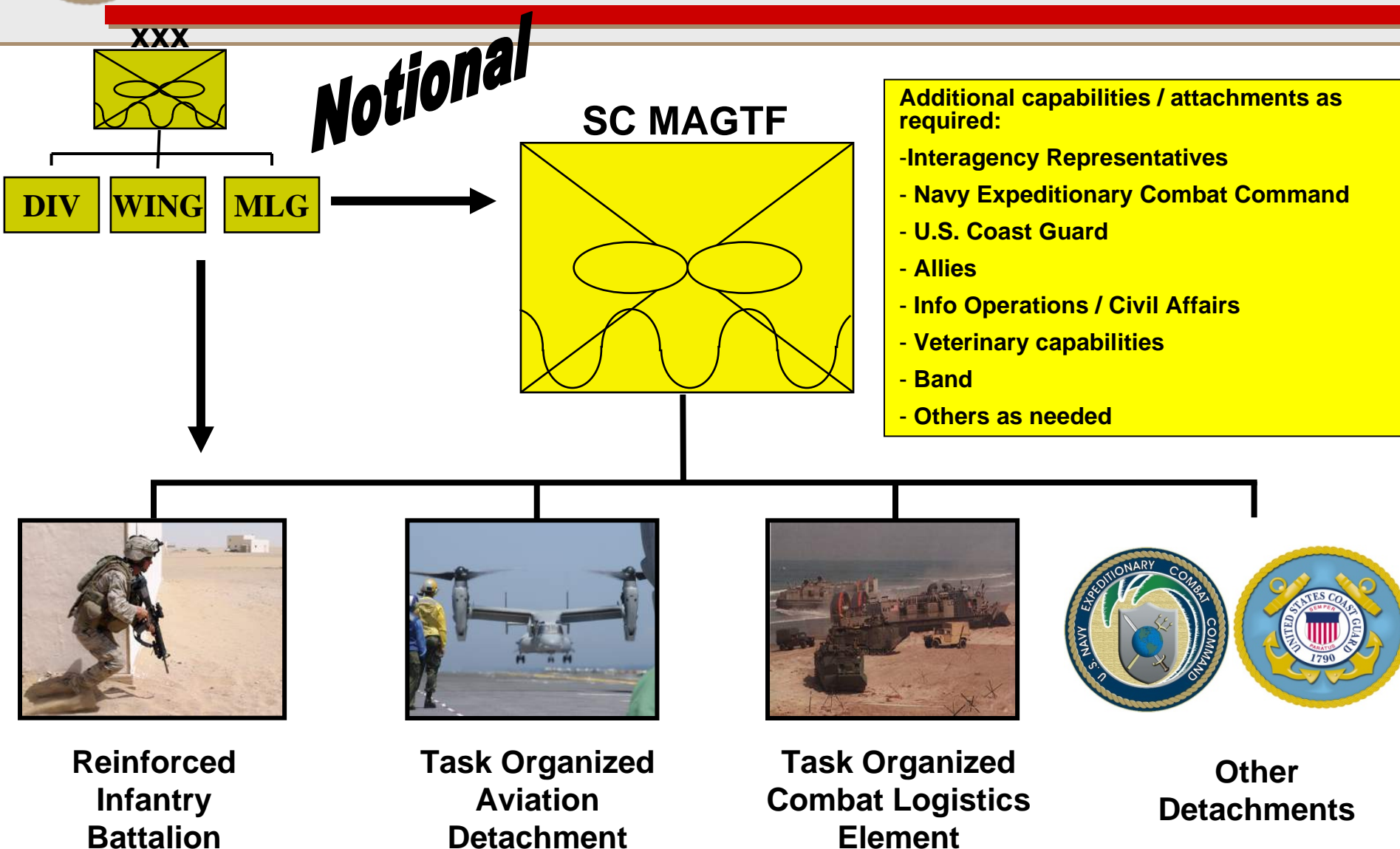


CRISIS RESPONSE: SELECTIVELY DISTRIBUTED OR AGGREGATED CAPABILITIES





SECURITY COOPERATION MAGTF'S TASK ORGANIZED TO MEET CCDR REQUIREMENTS





```

graph TD
    A[Face with X] --> B[Three Faces with X]
    A --> C[LCE]
    A --> D[Lightning Bolt]
    C --> E[Key]
    C --> F[Chair]
    C --> G[Wheel]
  
```

UNITAS
6

Long War



MARINE EXPEDITIONARY UNITS





MEU Operations / Exercises Summary

Operations/Exercises

- 22nd MEU SOC/ Kearsarge ESG (Deployed Aug 07 – Jan 08)
 - Operation Sea Angel – Cyclone Relief
 - AV-8B OIF/OEF Support
 - Theater Reserve / TSC CentCom
- 11th MEU SOC / Tarawa ESG (Deployed Nov 07 – Jun 08)
 - Operation Sea Angel II - Cyclone Relief
 - AV-8B OIF Support
 - Theater Reserve/ TSC CentCom
 - TSC PACOM
- 24th MEU (Deployed Mar 08 – Present)
 - Combat Operations in support of OEF
 - Afghanistan/ RC SOUTH
- 15th MEU/ Peleliu ESG (Deployed May 08 – Present)
 - Theater Reserve / TSC CentCom
 - TSC PACOM
- 26th MEU / Iwo Jima ESG (Deployed Sep 08 – Present)
 - Theater Reserve / TSC CentCom
- 31st MEU/ Essex ESG (Forward Deployed WestPac)
 - Responded to Myanmar (Burma) Typhoon
 - PACOM TSC



*MEU Employment (within last 12 months)
Sustained Operations Ashore (Combat
Ops), Humanitarian Assistance/Disaster
Relief and Theater Security Cooperation.*



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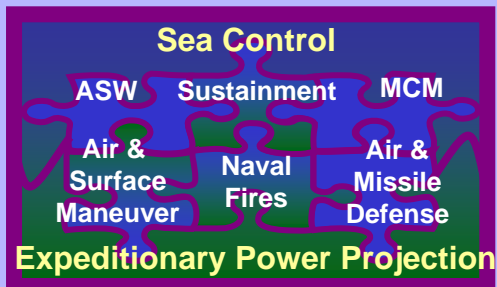
FORCIBLE ENTRY CAPABILITY

- USN – USMC Team provides the Nations most credible forcible entry capability.
- Forcible entry is the enabler for the Joint Force
- An Amphibious MEB, requiring 17 ships is smallest forcible entry capability.
- Requirement is to land 2 x MEB, the MEF Assault Echelon.
- Must be capable at the high-end of the spectrum of conflict.





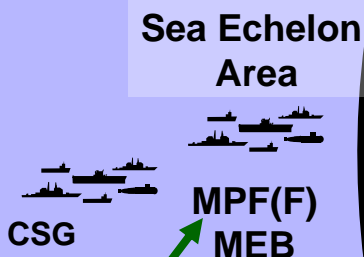
UNCLASSIFIED JOINT FORCIBLE ENTRY OPERATIONS



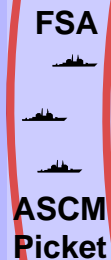
- The threat drives us over the horizon.
- Our goal is to collapse the threat to access.



**Joint
Seabased
Capabilities**



**Seabased
MEF**



**We fight as a MEF
as part of the
Joint Force...**

**MEBs provide a lift &
deployment metric**

US JFEO options:

- Amphibious (Navy / Marine Corps)
- Airborne (Army)
- Air assault (Army)

MOST DANGEROUS THREAT

Integrated anti-access systems:

- Long and short-range ASCM
- Long-range land attack cruise missiles
- Integrated air and missile defense weapons
- Submarines, UUV, USV, Mines

MOST LIKELY THREAT

**Proliferation of anti-access weapons
to other state/non-state actors**

- Short-range ASCM
- Small boats
- MANPADS
- IEDs / Mines/ RPG

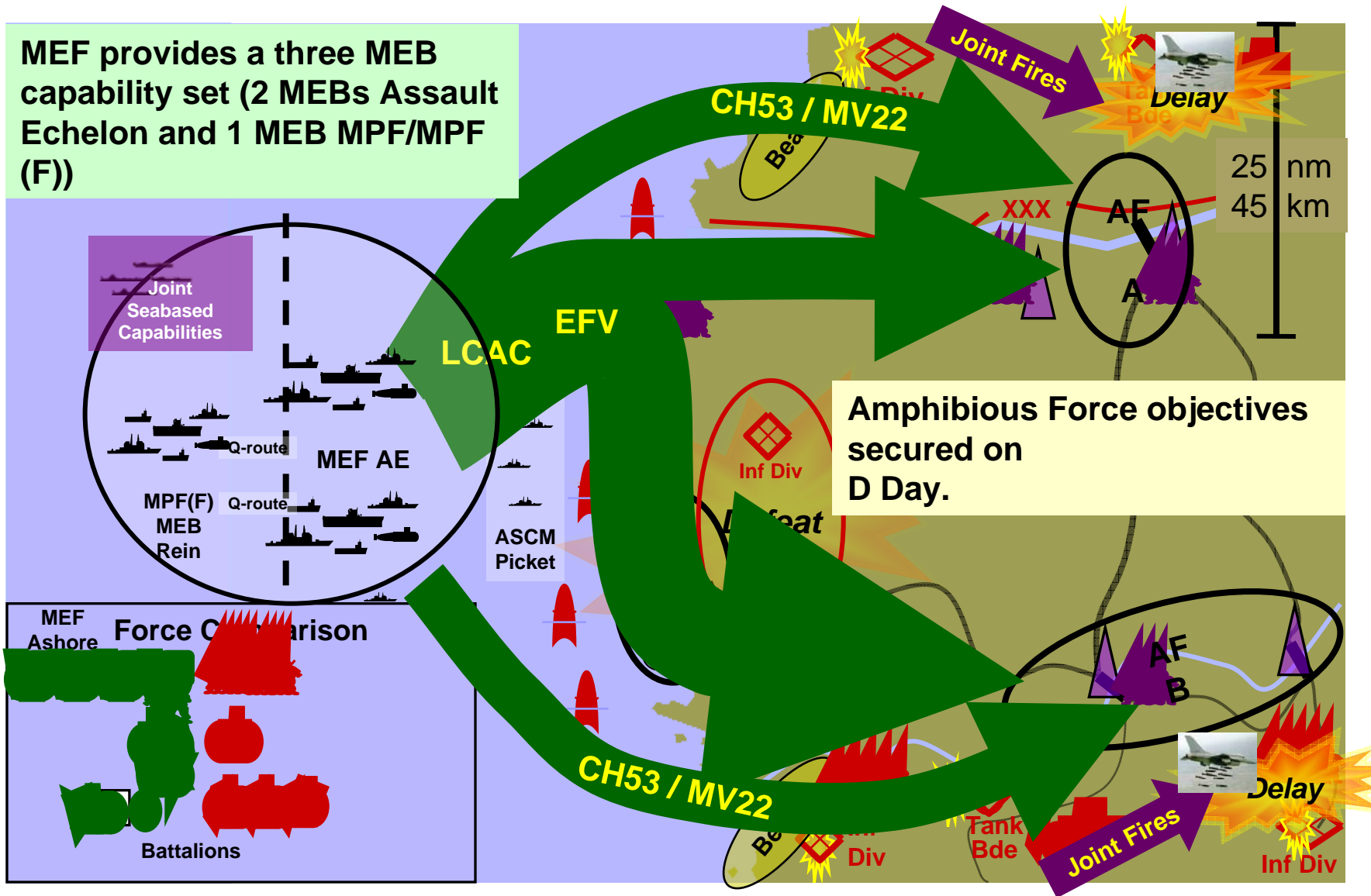


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MEF ASSAULT

MEF provides a three MEB capability set (2 MEBs Assault Echelon and 1 MEB MPF/MPF (F))

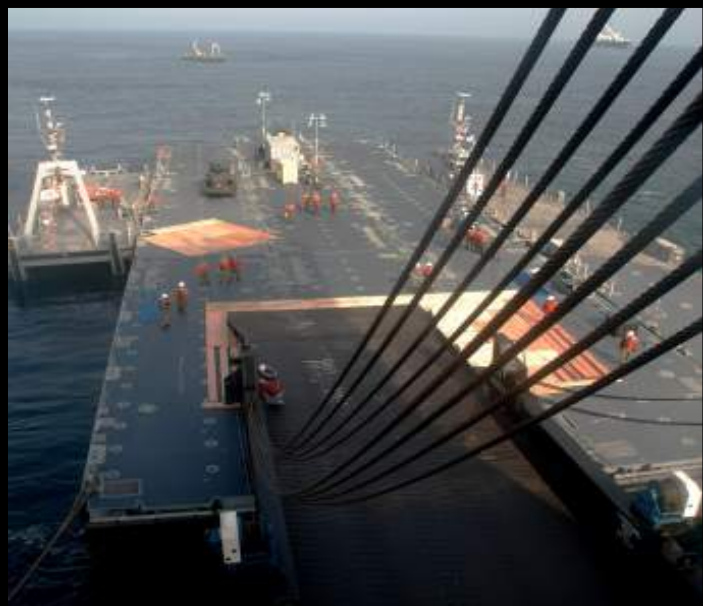




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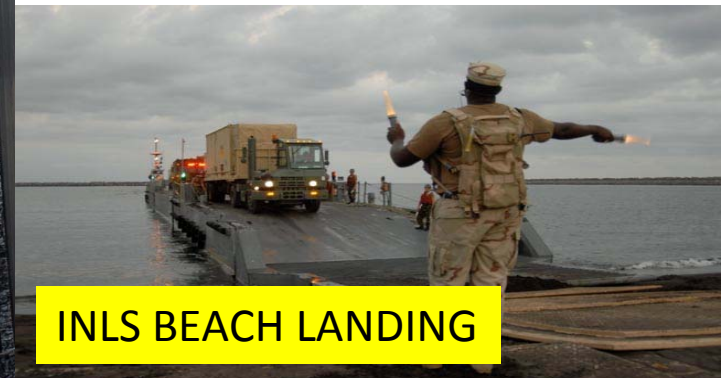
Prepositioning Campaign Plan POE-40



USNS BOBO RAMP ONTO RRDF



LOLO OPS ONTO INLS



INLS BEACH LANDING



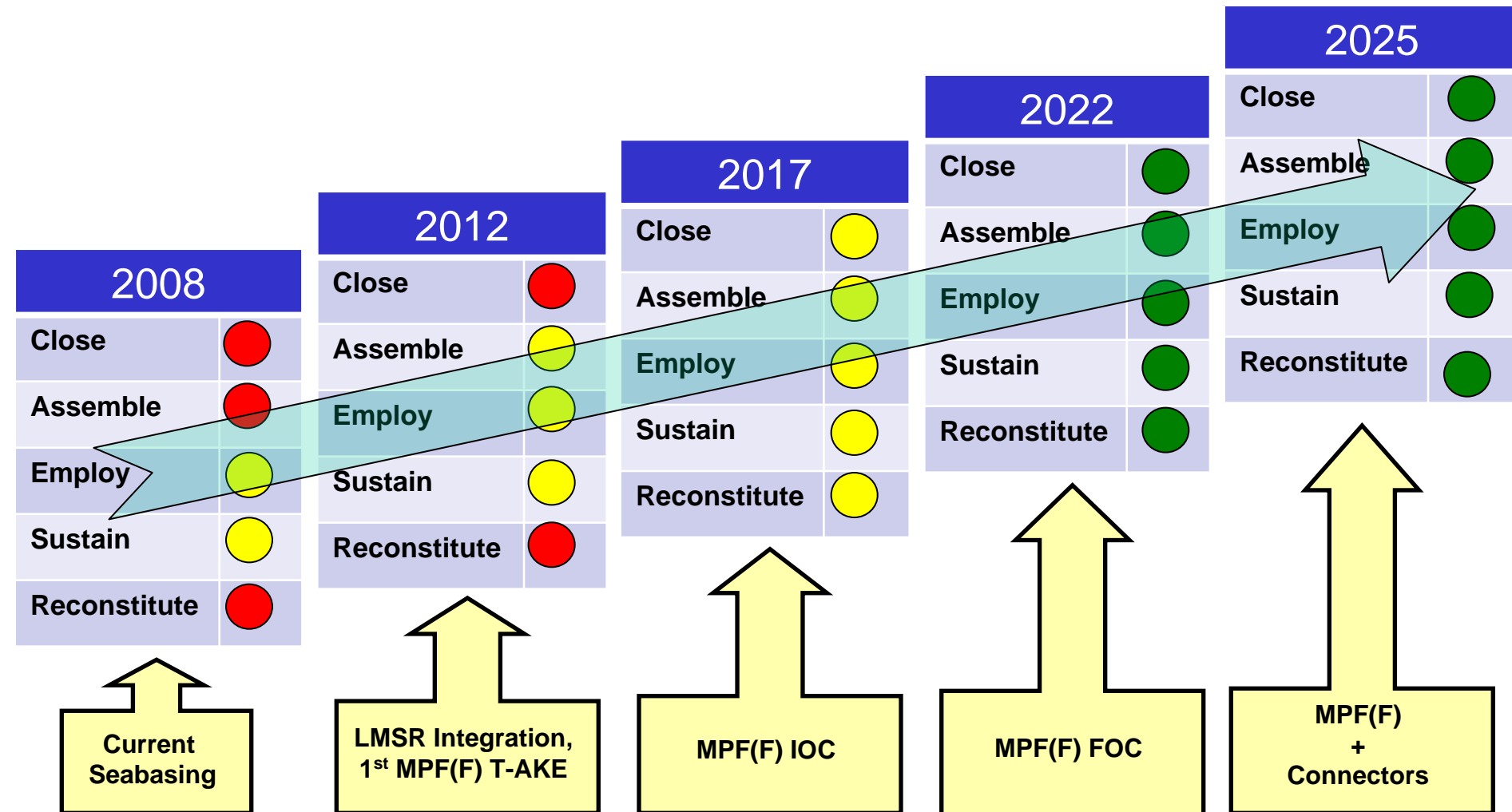
USNS SISLER



HSV SWIFT MOORES TO RRDF



Expanding Capabilities





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MPF(F) Campaign Plan Way Ahead



- Nov 08: Prepo Campaign Plan Workshop
 - MPF(F) Integration working group
 - Geo Prepo OPT
 - MPF 5-year exercise plan development
 - Includes HQMC and seabasing experimentation objectives (PP&O/CD&I)
 - Goal of one exercise per quarter
 - MARFOR/NAVFOR reps invited (G-3/4/5)
- Jan 09: HQMC publishes Prepo Campaign Plan
- Jan 09: HQMC publishes Five year exercise plan



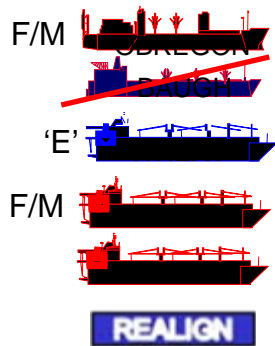
←Exercise Sea Dragon. USNS Sisler / USS Bataan vicinity Fort Story, VA (Sep 08). First exercise with LMSR & Improved Navy Lighterage System.



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LMSR INTEGRATION

(NEAR TERM: 2008 – 2011)

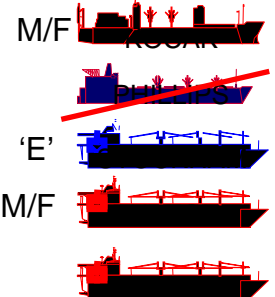


Lease Exp – Jul 08

MMC-9



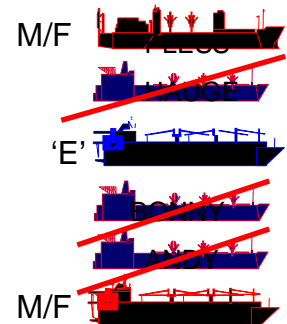
SHIFT LOAD



Lease Exp – Jul 08

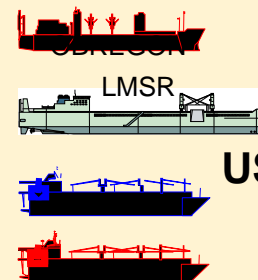
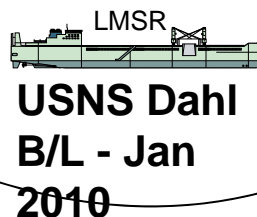
Williams to MPSRON-2 to support Phillips loadout (Nov 08)

Williams proceed to MPSRON-3 once HAUGE departs AOR



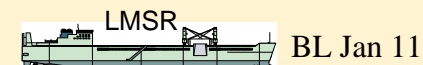
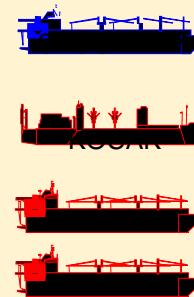
Lease Exp – Jul 09

Lease Exp – Jul 09
Lease Exp – Jul 09

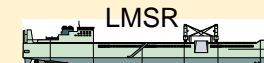
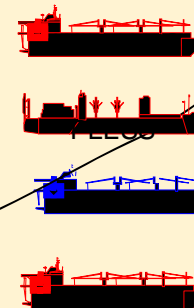


MMC-10

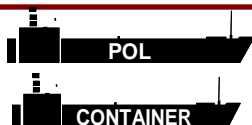
USNS Sisler



3d LMSR B/L equipment from Anderson + Armoring Reductions + new fielding



USNS Dahl



Apr – Jun 2009

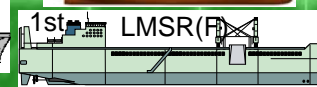
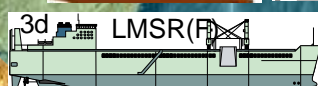




UNCLASSIFIED PROPOSED CONCEPT FOR MPF(F) LAYDOWN



MPF (F) reaches full operational capability in 2022 with the arrival of the LHD in MPSRON-1. All squadrons are fully capable of seabased operations. Each MPF(F) module carries a slice of a MEB equipment set that can be aggregated to support at sea arrival and assembly of a MEB during major contingencies or crisis. While INLS, landing craft, and assault support has been used to interface legacy and MPF(F) vessels, the MPF program is pursuing new build T-AKR with the vehicle transfer system to improve overall interoperability, increase selective offload capability, and replace aging Amsea and MPF "E" vessels.



MPF (F) FOC 2022

- MPSRON-1 (Jun 19 – Jun 20)
 - Seven Ships (3 x Legacy, 4 x MPF(F))
 - T-AKR (FY19); MPF(F) LHD (FY22)
- MPSRON-2 (Jun 20 – Jun 21)
 - Eight ships (4 x Legacy, 4 x MPF (F))
- MPSRON-3 (Jun 21 – Jun 22)
 - Eight ships (4 x Legacy, 4 x MPF (F))



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COMMAND AND CONTROL



Examine the C2 challenges associated with supporting Enhanced Company Operations in an immature theater against an irregular threat.

- **JOINT SA DOWN TO THE SQUAD LEVEL**

- Position Location Information (PLI)
- Joint Sensor Integration
- Commonality in C4 architecture/TTPs



- **EXPERIMENTAL COMMS ARCHITECTURE AND EQUIPMENT**

- **INFORM COC CAPSET V DEVELOPMENT**

- Transportable Multi Operational C2 handheld
- Draws power/waveform from any platform
- Mobility a must!





C4I CHALLENGES AFLOAT

- C4I – Networks & Bandwidth Management
 - Increase in C2 systems, web-based applications, and shore based databases exceed current capacity of IT architecture
 - IP system for LSD not robust enough to support complex operations
 - Bandwidth:
 - Does not facilitate / support “Reach-back” support concepts
 - Inadequate to support “everything” and does not keep pace with systems & number of users
 - Adversely effects internet based applications
 - Development of IT capabilities/solutions that keep pace with requirements and an effective bandwidth management “tool” would significantly reduce the number of C4I related issues experienced by Sea Based forces



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THE COMPANY CMDR'S BATTLEFIELD



PLI, Voice, Data,
Imagery



PLI, Voice, Data
Imagery

Voice, Imagery
Line of Sight

PLI, Voice, Data
Imagery

PLI, Voice, Data
Imagery

PLI, Voice, Data

PLI, Voice,
Data,
Imagery

LOGISTICS PRIORITY

High: Distribution to Squad Level
(What they need, when they need it)

High: Casualty treatment and
evacuation, consistent w/the
Golden Hour

INFORMATION PRIORITY

- High
- Medium
- Low

Lines Definition

- Info Exchange
- Higher HQ Info Exchange





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AFGHANISTAN DISPERSED OPERATIONS



MARINE SPECIAL OPERATIONS
COMPANIES (x2) ISO CJSOTF-A / OEF

- RC-WEST/ RC SOUTH

USMC EMBEDDED
TRAINING TEAMS

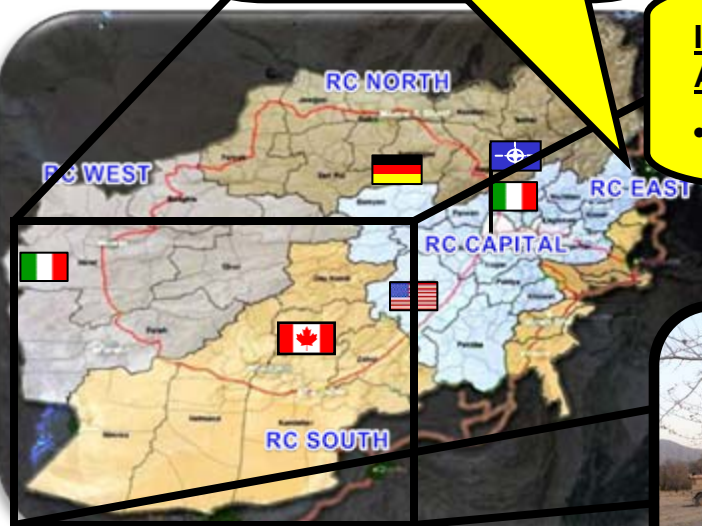
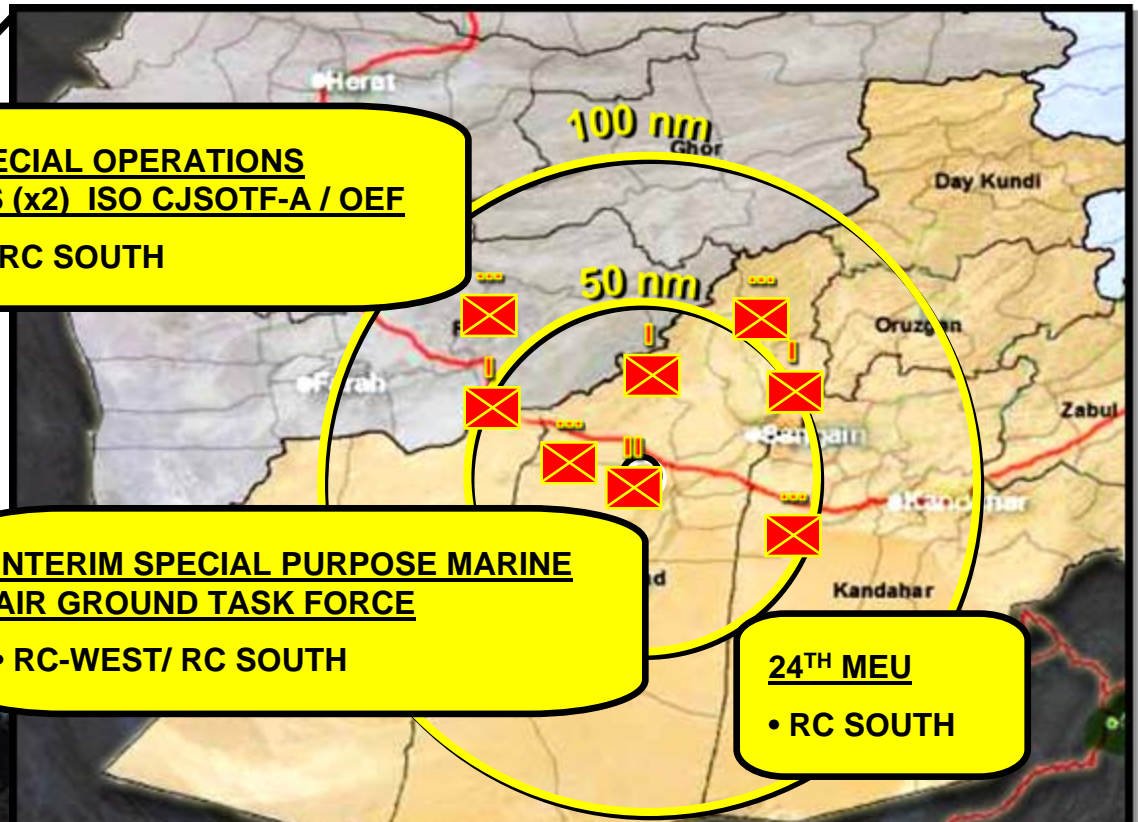
- RC EAST

INTERIM SPECIAL PURPOSE MARINE
AIR GROUND TASK FORCE

- RC-WEST/ RC SOUTH

24TH MEU

- RC SOUTH





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MANEUVER

MV-22



OIF Missions:

- AERO SCOUT
- RAIDS
- Asslt Sppt
 - Troops
 - Equipment
 - Casevac
 - TRAP

Current/Future:

- MEU Deployments



Key Performance Parameters:

- | | |
|-------------------------|--------------|
| ➤ Airspeed | 250 Kias |
| ➤ Range | 2000 NM |
| - Aerial Refuel Capable | |
| ➤ Payload | 24 pax |
| | 10k External |



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MANEUVER

NAVAL MCM REQUIREMENTS



- The Threat
 - Proliferation of Cheap but effective sea mines
 - Mines and IEDs = “asymmetric weapon of choice”
- Assured Access: Ensure U.S. ability to Project Power at Time/Place of It's Choosing
 - Commanders Must be Able to Detect and Avoid Mines when Possible, and Breach when Necessary
 - **Deep Water, SW, VSW, SZ, BZ and Ashore**
- **MCM capabilities critical component of Expeditionary Ops**
- **Carrying C-IED lessons learned forward**



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MARINE CORPS ISR ENTERPRISE (MCISR-E)

Objective: improve the quality, timeliness, and availability of intelligence to enable net increase in tempo and effectiveness of our operations at all echelons.

- Enterprise approach
 - Develop Distributed Common Ground System-Marine Corps
 - Leverage national, theater, joint ISR capabilities
 - Leverage USMC operational reachback (MCIA)
 - Intelligence interoperability with Coalition partners
- Persistent ISR capabilities
- Expanding All-Source and Multi-Discipline Capabilities
 - Cultural Intelligence
 - OIF: Economic - Political Intelligence Cell
 - OIF: Joint Prosecution and Exploitation Center
- Improved CONOPS and capabilities for tactical intelligence
 - “Every Marine a Collector”
 - Company Level Intelligence Cells
 - Improved ISR sensors and comms at company level
- Grow the Force: >25% increase in Intel personnel during FY08-09



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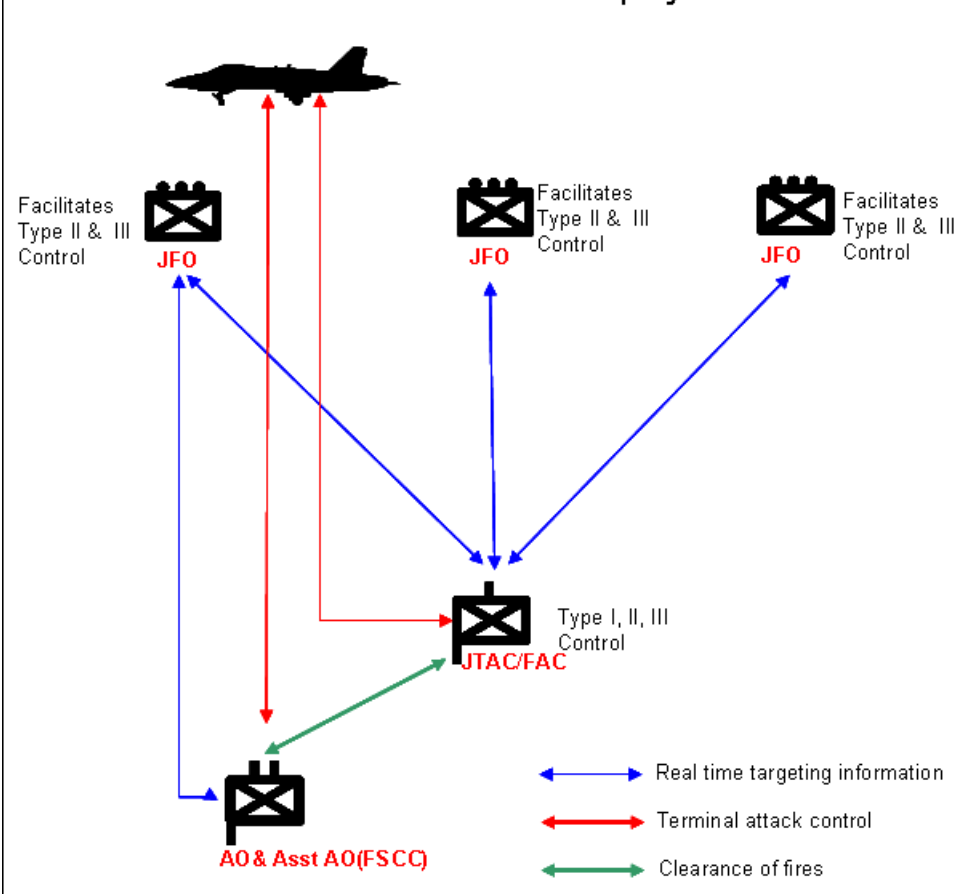
FIRES/NSFS



PROVIDE INCREASED ACCESS TO CONTROL USMC AND JOINT FIRES DOWN TO LOWER LEVELS.

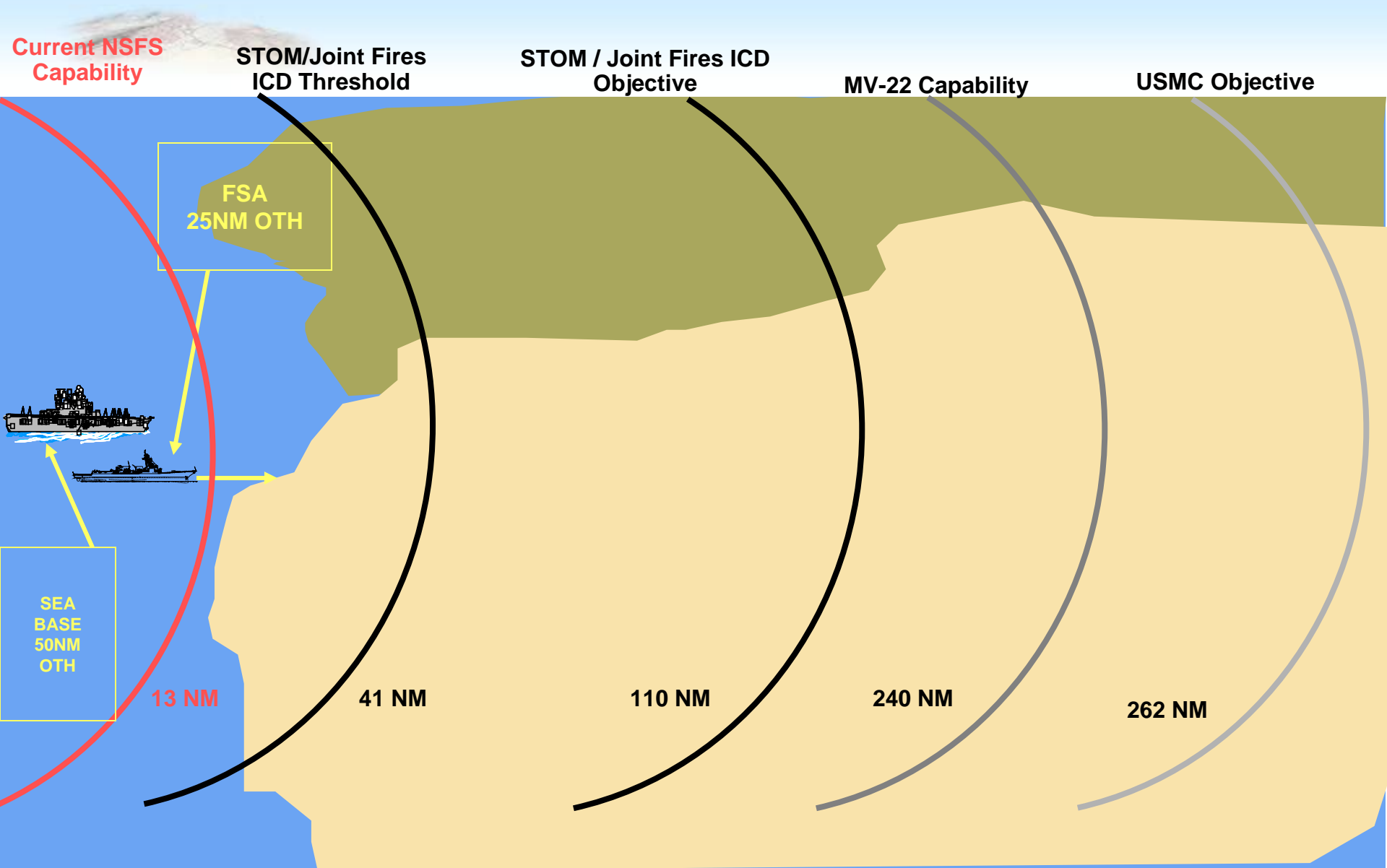
- Joint Terminal Attack Controller (JTAC)
- Joint Fires Observer
- Surface delivered fires
 - Expeditionary Fire Support System (EFSS)
 - M777 Lightweight 155 Howitzer
 - High Mobility Artillery Rocket System (HIMARS)
- Aviation Delivered Fires

JTAC/FAC and JFO Employment





NSFS CONOPS STOM Support





MEU LOGISTIC CHALLENGES

- Embarkation

- Approx 65K Sqft available
- MEU T/E requires approx 95K Sqft of embark space
- **Delta 30K Sqft**
- New Equipment is larger and heavier than ever before:
 - 7 Ton:
 - Does not fit through the side port ramps
 - Does not fit in LSD wind tunnel
 - UAH / ECV:
 - 2 x Heavier than original HMMWV
 - Can longer fit 4xLAV and 3xHMMWV on an LCAC
- Design equipment that is:
 - Lighter
 - Survivable
 - "Fits" on "L" class ships

- Medical

- "L" Class ships lack MRI or CAT SCAN equipment
- Causes "long range" CASEVACs
- Design & Installation of MRI / CAT Scans to fit on LHA/D would provide more complete medical care from the Sea Base



OPERATIONAL LOGISTICS

JOINT PRECISION AIR DROP SYSTEM (JPADS)

- **Description**

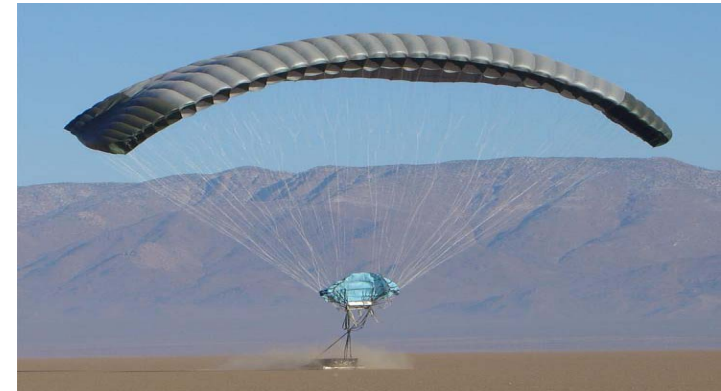
- JPADS is a high altitude capable guided precision airdrop system that provides increased control release from the aircraft, and reduces on ground load dispersion with accuracy. JPADS is controlled by the assistance of a mission planner laptop with precision airdrop applications, meteorology data gathering kit, and GPS re-Broadcast kit. JPADS satisfies four identified principal needs/"gaps" in the joint airdrop functional area; increased ground accuracy, standoff delivery, increased air carrier survivability, and improved effectiveness/assessment feedback regarding airdrop mission operations.

- **JPADS Requirement Current Status**

- The ICD was approved 06 Jan 2006 by the JCB and forwarded to the JROC.
- The Army staffed the Capabilities Development Document (CDD) through the JCIDS process and the final version was approved on 26 Jan 2007.
- Nov 2007 FL FCB request wavier to use JPADS CDD in lieu of a CPD as the KPP's had not changed. Request approved January 2008.

- **JPADS Equipment**

<u>System</u>	<u>Lead</u>	<u>Detail</u>	<u>Qty</u>	<u>AC</u>
JPADS-ULW	USMC	250-699 lbs	149	All
JPADS-2K	Army	700-2200 lbs	109	All
JPADS-10K	Army	5000-10000 lbs	28	130
JPADS-MP	USAF	Helo GPS only	114	All
MP - software component computes missions for: 2K, 10K, HAHO Nav, ULW				
MP – temporarily installed hardware components (AC used on: USAF C-17; Joint C130J (short & stretch); USMC Only CH-53, CH-46, MV-22)				
<ul style="list-style-type: none"> • Computer to compile & transmit 802.11 mission to JPADS/ HAHO Nav • Drops to capture and transmit winds back to MP on AC (when employed above 13000 ft MSL) • UHF Receiver to receive dropsonde transmission • GPS Repeater and antennas to retransmit GPS signals within AC • Cabling and connectors 				





FORCE PROTECTION

MRAP Variants in Afghanistan

**MaxxPro
Navistar Defense**



CAT I

Configuration	4x4
Operaitonal Length	260"
Operational Width	120"
Operational Height	159"
Max Speed	69.2 MPH
GVWR	43,500 lbs
Max Slope	Up to 60%
Consumption Rate	5.8 MPG

**MaxxPro DASH
Navistar Defense**



CAT I

Configuration	4x4
Operaitonal Length	246"
Operational Width	102"
Operational Height	109"
Max Speed	UNK
GVWR	38,700
Max Slope	Up to 60%
Consumption Rate	UNK

**MaxxPro
Navistar Defense**

No Picture Currently Available

Ambulance

Configuration	4x4
Operaitonal Length	260"
Operational Width	120"
Operational Height	159"
Max Speed	69.2 MPH
GVWR	43,500 lbs
Max Slope	Up to 60%
Consumption Rate	5.8 MPG

**Cougar
Force Protection Industry, Inc.**



CAT I

Configuration	4x4
Operaitonal Length	249"
Operational Width	104"
Operational Height	122"
Max Speed	68.5 MPH
GVWR	38,000 lbs
Max Slope	60%
Consumption Rate	6.0 MPG

**MK5E
General Dynamics**



CAT I

Configuration	4x4
Operaitonal Length	277"
Operational Width	96"
Operational Height	137"
Max Speed	55 MPH
GVWR	38,000
Max Slope	60%
Consumption Rate	8.6 MPG

**USSOCOM
BAE Land Systems**



CAT I

Configuration	4x4
Operaitonal Length	266"
Operational Width	113"
Operational Height	134"
Max Speed	65 MPH
GVWR	40,340
Max Slope	60%
Consumption Rate	6.8 MPG

**Cougar
Force Protection Industry, Inc.**



CAT II

Configuration	6x6
Operaitonal Length	296"
Operational Width	103"
Operational Height	123"
Max Speed	64.4 MPH
GVWR	52,000 lbs
Max Slope	Up to 60%
Consumption Rate	5.0 MPG

**Ambulance
BAE Land Systems**



Ambulance

Configuration	Ambulance
Operaitonal Length	337"
Operational Width	108"
Operational Height	134"
Max Speed	67.9 MPH
GVWR	52,000 lbs
Max Slope	60%
Consumption Rate	6.9 MPG

**Buffalo
Force Protection Industry, Inc.**



CAT III

Configuration	6x6
Operaitonal Length	323"
Operational Width	102.5"
Operational Height	156"
Max Speed	55 MPH
GVWR	75,000 lbs
Max Slope	Not Available
Consumption Rate	3.5 MPG

QUESTIONS?

A photograph of several US Marines in full combat gear, including helmets, goggles, and tactical vests, moving through a rocky, urban-like environment. They are armed with assault rifles and appear to be in a tactical advance. The background shows some greenery and a concrete wall.

Marines are “Soldiers of the Sea” that must be Fast, Agile, and capable of Maximizing their Strengths

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Back-Up Slides



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“HOW WE FIGHT” WARGAMES & MAGTF BATTLEBOOK



SITUATION

- Changes in how we fight
- Changing environment (Hybrid Threat)
- Change in administration
- Revalidation of core competencies
- Naval partnership
- Long War Concept
- POM-12 & QDR
- 202K
- MAGTF T/E Review
- Stresses on force & equipment
- Constrained resources
- Fixed in place for last 6 years

Requires a diverse, on-going discussion & vision of “How we Fight” viewed through an operational lens.

OPPORTUNITY

- Integrate, compliment & inform
 - **HQMC, MarFors, Supporting Establishment**
 - **EFDS**
 - **Advocacy**
 - **MAGTF Campaign Plans**
 - **POM**
 - **Navy, Joint & Interagency Actions**
 - **Operational Analytics**
 - **Military Judgment**
- “How we fight” drives resourcing decisions
- Identify risk, tradeoff & leverage points
- Sequence MAGTF capability builds - 2025

A complete & compelling vision of How we Fight articulated internal to the USMC and external to our joint & interagency - must drive resourcing.



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ENHANCED COMPANY OPERATIONS (ECO)



- *Improvements focused on the Marine Rifle Company designed to increase its capabilities, agility, lethality and survivability across the full spectrum of military operations.*
- *Informed by:*
 - Operational experience in OIF/OEF
 - Capitalize on work done on Distributed Operations
 - Results of Experimentation and Analyses





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AFGHANISTAN

MARINE EXPEDITIONARY UNIT



24TH MEU conducts combat operations in Afghanistan, in support of coalition objectives and defeats insurgent forces in order to assist the Government of Afghanistan in extending security, stability, and governance.

Essential Tasks:

- Defeat insurgents
- Set conditions for Afghanistan Security Forces success

- 24th Marine Expeditionary Unit
- Posture forces to counter the anticipated enemy Spring Offensive
- Combat Operations in support of the International Security Assistance Force for through Fall of 2008.





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AFGHANISTAN

INFANTRY BATTALION



2/7 will conduct security, training, and mentoring operations in support of the Afghanistan Police Training Mission.

Essential Tasks:

- Provide Security to Civilian Afghanistan Police Mentors
- Mentor, Train, and Support Afghanistan Police.

- 2^D Bn (Rein), 7TH Mar

- Enhance Afghanistan Police capabilities through Fall of 2008

- Extend Afghanistan Police Authority and Influence.



2008



USMC NSFS REQUIREMENTS PEDIGREE



JOINT FIRES ICD

CMC VIEWS
ON NSFS

HANLON
LETTER

RHODES
LETTER

VAN RIPER
LETTER

NSFS
COEA

NSFS
MNS

GAO
2004
NSFS

MROC DM
44-2005

GAO
2006
NSFS

MULLEN
LTR
2000 EXPO
FIRES

GAO
1995
NSFS

1992 1993 1995 1996 1999 2002 2004 2005 2006



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Seabasing Capabilities MPF + Amphib



	2008	2025
Close		
-Preposition the MEB	●	●
-Conduct selective offload	●	●
-Close the MEB to the seabase	●	●
Assemble		
-Conduct <u>at-sea</u> arrival and assembly	●	●
Employ		
-Provide MEB C2	●	●
-Employ Surface BLT and Vertical BLTs from the seabase	●	●
-Accommodate and operate organic surface connectors	●	●
-Conduct external operations in Sea State 3 threshold/Sea State 4 objective	●	●
Sustain		
-Sustain forces ashore from the seabase	●	●
-Provide accommodations and aircraft/vehicle maintenance capability (O level/selected I level) for a MEB	●	●
Reconstitute		
-Reconstitute at Sea	●	●



NDIA: 13th Expeditionary Warfare Conference
22 October 2008

Logistics Solutions for the Warfighter



Purpose & End State



- *Broad Overview of BICmd & MPF Program*
 - *Impact of Command & MPF 101 Executive Primer*
- *End State: Increase Situational Awareness*
 - *Our Relationship with Industry*
 - *Niche Markets*
 - *Surge and Future OpTempo*
 - *Obligation to the Warfighter*



Co-Located @ Jacksonville Port: DHS - Strategic Port



3 C's (Cars, Containers, & Coal)

- *2nd Largest Commercial Port on East Coast for Automobile Imports*
- *Major Growth (3X) in Container Business; 3rd on East Coast by 2020.*
 - *Intermodal, Supply Chain, & Distribution businesses.*
 - *Panama Canal being Widened*
- *Largest City in Sq Miles in CONUS*
- ***Impact on Blount Island.... [Good thing we purchased in 2004!]
Great Investment.....***

Surrounded by Industry!



Mission



Provide Prepositioning Programs and operational logistics support to Marine Corps and DoD forces to enable them to rapidly and successfully conduct and quickly recover from assigned missions across the full spectrum of expeditionary warfare and anti-terrorist operations.





Snapshot of Our Enterprise: 1 Commander



Marine Corps Logistics Command (Forward)

MCLC

MPF Operations, Training, and Exercises

Blount Island Command Operations/MMC

Marine Corps Support Facility Blount Island

Logistics Solutions for the Warfighter



Scope of Activities



Part of a Multi-Billion Enterprise!

- *War Footing!*
- Mission: Always Ready!
 - *Agile! Lean! ----- Economy of Force*
- *Complicated Operation and Business*
 - **80/20 split**
- *Dynamic & Evolving Operational Environment*





Marine Corps Support Facility - Blount Island



Logistics Solutions for the Warfighter



Current Strategic Reach





“Products & Services” We Provide to the USMC



- *Combat Ready Equipment: 58 Tanks, 25 LAVs, 109 AAV, 1,000 wheeled vehicles, Per Squadron*
- *Capability Sets: Utilities, Fuel, Medical, Airfield, SeaBees Earth Moving,*
- *Sustainment: Ammo, Parts, Fuels, Rations, Building Material, Fleet Hospital, [30 days]*
- *Accurate Data: Embark Info, HAZMAT, TSS of Ships....*
- *Operational Logistics Services: Rapidly Deployable*



Compendium of Our Current Battle Rhythm



- *8 Ship Back Loads/Down Loads: Sourcing Equipment, Repairs, & Data*
 - *Introduction of LMSRs, Newly Fielded Equipment, Post OIF Reconstitution*
- *Program Oversight in Norway & Supported Exercises throughout Europe/Africa*
- *Direct Support to 5 Major MPF Exercises*
- *6 Forward Sites in CENTCOM AOR in 4 countries; will likely grow!*
 - *Retrograde Ops, Equipment Rotation & Sourcing, & Maintenance Regeneration,*
- *Oversight of the 14 Base Functional Areas*
- *30% of the “Core” Command “On the Road”*



Functional Enablers



- *The oversight of a \$4B+ Inventory and associated supporting enablers.....***4 MEBs worth of Combat Power!**
 - *Equipment Maintenance & Supply*
 - *Data Management*
 - *Transportation*
 - *Port/ Stevedore Operations*
 - *Container Support*
 - *Lighterage Support*
 - *Base Services*



A Unique & Powerful Enabler

- Contractors
- *Business: Of Course, but...*
 - *Partnership with Marine Corps*
 - *Forward Presence on every ship 24/7/365*
 - *Deploy into theater [quickly!]*
 - *65% are Former Military; 35% have 15yrs + on the job!*
- *Backing of Corporate Resources*
 - *Access to Lean Processes, Solutions, etc.*
 - *Leverage to USMC's Advantage and Effectiveness*



Strategic Environment & Operational Landscape



USMC Challenges and Opportunities

Still Sustain the Long War: Transition within CENTCOM AOR
Growing the Force = Equipping the Force
Retrograde, Reset, and Reconstitution

Compete for
"same" Resources:
\$\$/Rolling Stock!

Changing
Program to New
Concepts/Doctrine

- Demand for US Marines Continues & Increases...
- Where and When? Flexibility and Agility
- BICmd = Stay Fully Engaged + Part of the Solution.



Industry Focuses on Our Core Competencies



- *Supply*
 - *Maintenance*
 - *Distribution*
-
- *Embark/Port Operations*
 - *Contracting*
 - *Data Management: Asset Visibility*



Niche Sea Basing / Long War Enablers & Commercial Markets



- *Integration of Legacy and New Equipment*
- *Geo Prepositioning*
- *Velocity*
- *Asset Visibility*
- *Selective Download*
- *Sustainment / Maintenance at Sea*
- *Modular Designs*
- *Strategic Lift / Connectors*

*Sustainment
&
Regeneration*

Agile and Flexible: Last Tactical Mile



Niche Retrograde, Reset, and Reconstitution Enablers & Commercial Markets



- *Requirements Determination*
- *Modeling*
- *Inventory Control*
- *Streamline Our Supply Chain*
- *Care in Storage*
- *Triage Tools*
- *Total Life Cycle Management!*

*Sustainment
&
Regeneration*

Agile and Flexible: Get Ahead of Equipment Reset Bow Wave

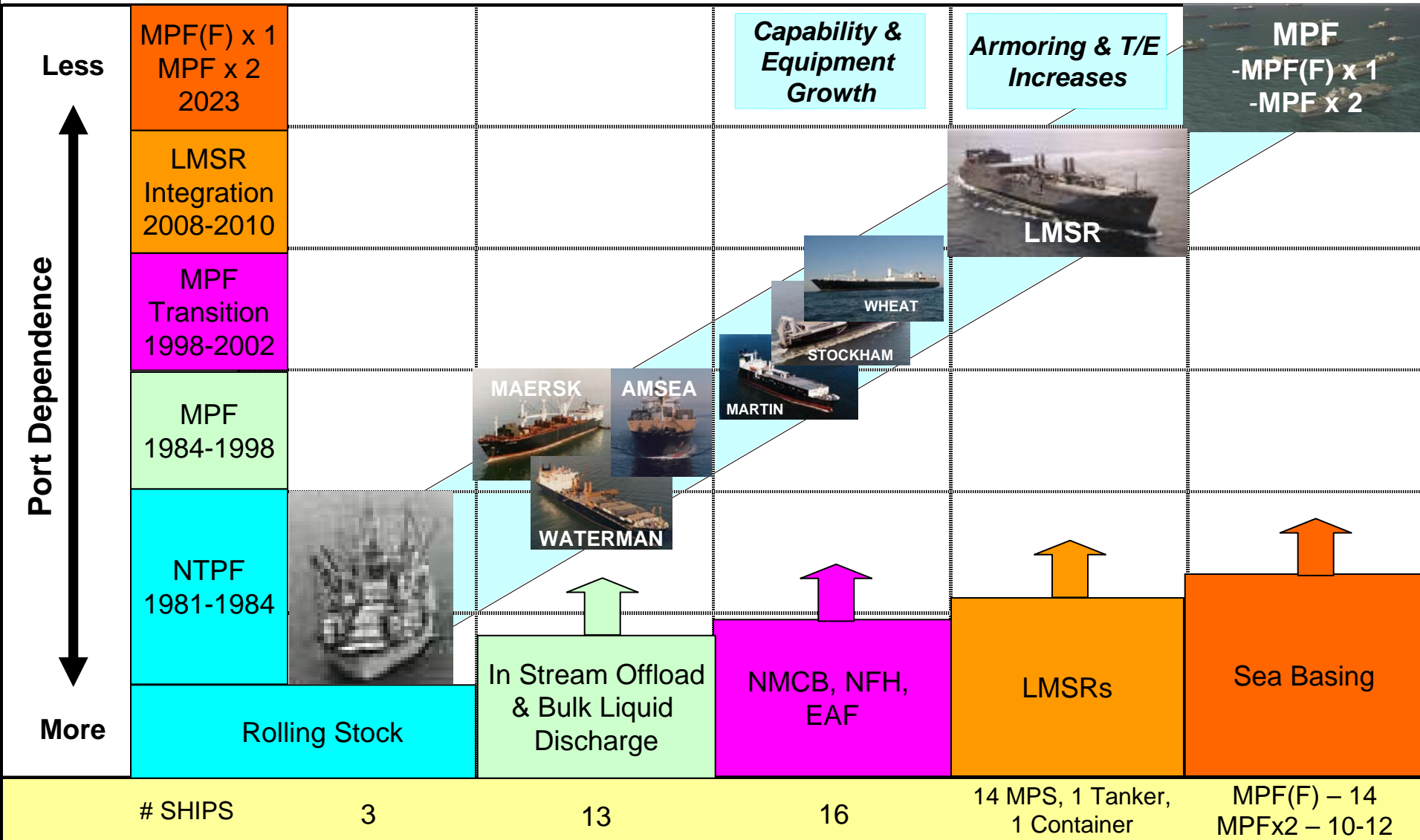


Surge and Future Op Tempo



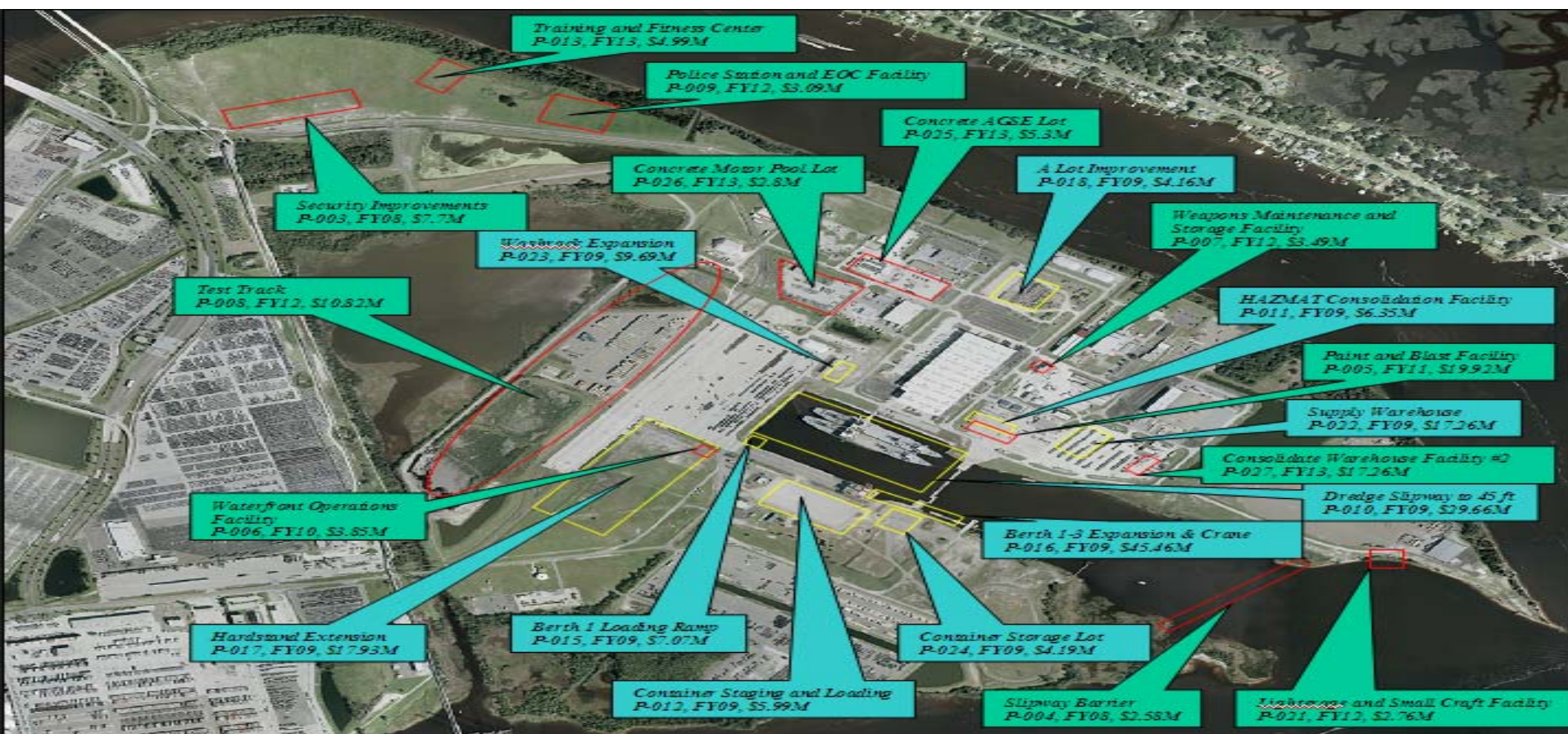
- *Surge [2008-2010]*
 - *Retrograde from Iraq/ OEF Build Up & Sustainment*
 - *Reset Services*
 - *Posturing for MPF(F) Transition*
 - *Infrastructure Growth/ Master Plan*
- *Future [2010 & Beyond]*
 - *Post Deployment Operational Logistics Services*
 - *Geo Prepo site*
 - *MPF(F) Hub*
 - *Major Investments in Infrastructure/ Master Plan*

MPF History / Growth



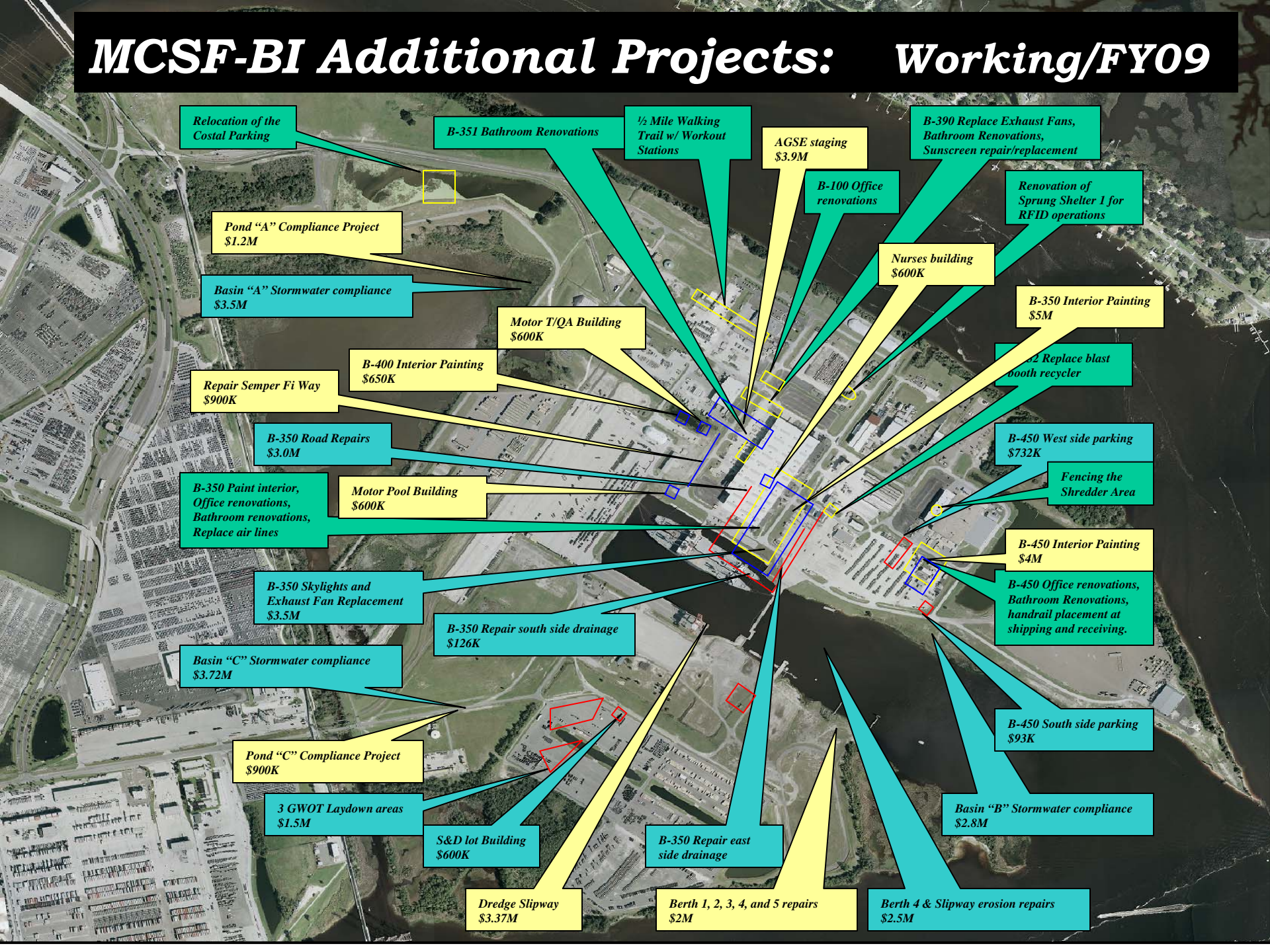


MCSF-BI MILCON Program & Reset Projects



Logistics Solutions for the Warfighter

MCSF-BI Additional Projects: Working/FY09



Relocation of the
Costal Parking

B-351 Bathroom Renovations

½ Mile Walking
Trail w/ Workout
Stations

AGSE staging
\$3.9M

B-390 Replace Exhaust Fans,
Bathroom Renovations,
Sunscreen repair/replacement

Renovation of
Sprung Shelter 1 for
RFID operations

Pond "A" Compliance Project
\$1.2M

Basin "A" Stormwater compliance
\$3.5M

Motor T/QA Building
\$600K

B-100 Office
renovations

Nurses building
\$600K

B-350 Interior Painting
\$5M

Repair Semper Fi Way
\$900K

B-400 Interior Painting
\$650K

2 Replace blast
booth recycler

B-350 Road Repairs
\$3.0M

Motor Pool Building
\$600K

B-450 West side parking
\$732K

Fencing the
Shredder Area

B-350 Paint interior,
Office renovations,
Bathroom renovations,
Replace air lines

B-350 Skylights and
Exhaust Fan Replacement
\$3.5M

B-350 Repair south side drainage
\$126K

B-450 Interior Painting
\$4M

B-450 Office renovations,
Bathroom Renovations,
handrail placement at
shipping and receiving.

Basin "C" Stormwater compliance
\$3.72M

Pond "C" Compliance Project
\$900K

3 GWOT Laydown areas
\$1.5M

S&D lot Building
\$600K

B-350 Repair east
side drainage

B-450 South side parking
\$93K

Basin "B" Stormwater compliance
\$2.8M

Dredge Slipway
\$3.37M

Berth 1, 2, 3, 4, and 5 repairs
\$2M

Berth 4 & Slipway erosion repairs
\$2.5M



Surge and Future Op Tempo



- *Major Enabler to our End State:*

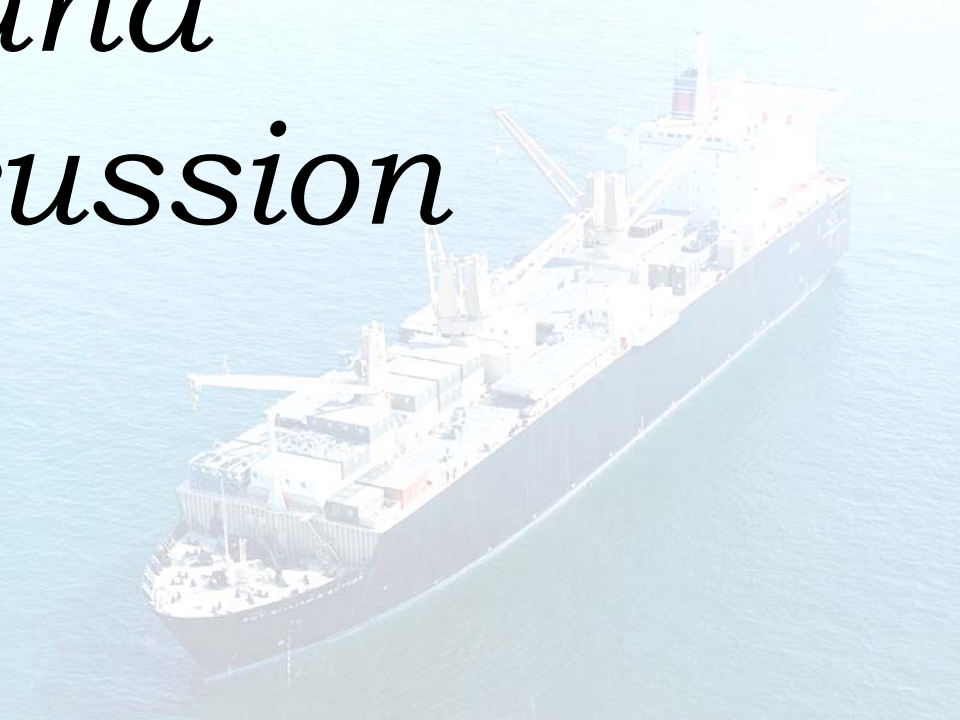
Better postured with more industry generated solutions.....



Closing Notes



- *Industry leverages its muscle..*
- *Contractors enable our readiness..*
- *Maintaining an open dialogue..*
- *Complexity of issues cannot be underscored..*
- *Logistics requires more attention/ solutions..*
 - *Senior Officers “business”*
 - *Driving Operations too much?*
 - *Like to help afford them less restraints , more options, and more responsiveness*



Questions and Discussion



Marine Corps Support Facility - Blount Island



Acreage: 1235.2 Total
 -901.6 On-Island
 -333.6 Dredge Spoil and Conservation Site

Facilities

Industrial: 670,425 SqFt (20 Buildings)

Storage: 73,788 SqFt (4 Clam Shells)

30 acres (paved storage)

27 acres (Lighterage storage)

Staging Area: 33 acres (Reinforced Concrete)

25 acres (Intermodal Area)

72 Acres (Non-paved)

Slipway: 3,500' X 450' Dredged to 38'

Pier Space: 5 berths total (Primary: Berth 1~1000')

Crane: Pier-side Gantry at Berth 1

-Rail-mounted w/40 long ton lift capacity

Rail: Two 2000' spurs and bypass loop

Distance to Sea Buoy: 7 nautical miles



Blount Island Commands



- **CO, Blount Island Command**
 - *Plans, coordinates & executes the logistics efforts in support of the MPF and MCPP-N Programs*
 - *Reports to the CG, MCLC*
- **CO, Marine Corps Logistics Command (Forward)**
 - *Executes all MCLC programs in the USCENTCOM AOR in order to provide effective and economical operational-level logistics in support of COMUSMARCENT*
 - *Reports to the COMUSMARCENT*
- **CO, Marine Corps Support Facility – Blount Island**
 - *Responsible for traditional base/facilities functions in support of Blount Island Command*
 - *Reports to the CG, MCIEAST*

Snapshot of Our Programs & Services...



- **16 ships & growing!**
- **6 caves & 2 storage sites in Norway**
- **Goes to the Fight; Proven Record for over 20 years**
- **Major Resources [\$\$\$]**
- **4 MEBs worth of Combat Power**
- **Deployable Operational Logistics Detachments**

What does BICmd do?

- **“Program Executors”**
- **Determine Requirements, Assess, Measure & QA**
- **Honest Brokers; Op Forces Support**
- **Stewards of Our National Treasure**

Where Our Contractors Fit In?

- **Plan, Execute, and Conduct QC**

Where The Warfighter Fit In?

- **Customer**
- **Planner**
- **Executor**

Lt Col Ben Garza

PEO LAND SYSTEMS MARINE CORPS

*13th Annual Expeditionary Warfare
Conference
22 October 08
Panama City, FL*



IT'S ALL ABOUT THE WARFIGHTER



IT'S ALL ABOUT THE WARFIGHTER



The Future of Expeditionary Mobility



Major Defense Acquisition Program Oversight & Management

- ❑ PEO LS has entire Marine Corps' Future Tactical Mobility with enhanced survivability
 - EFV
 - MPC
 - JLTV
- ❑ Force Projection
 - LW155 (M777) Transportability in Afghanistan
- ❑ Force Protection
 - MTVR w/MAS/Over 2,000 delivered in Iraq
- ❑ Value Added Through Focus, Discipline & Collaboration

“It's All About The Warfighter”



Competency Aligned Organization

PEO LS is a separate command reporting to ASN (RDA) but...

- ☐ **Partners with Marine Corps Systems Command**
 - Similar to alignment between other DON PEOs and SYSCOMs and leverages MCSC infrastructure & services
 - ASN RDA Charter and intent for PEO LS to manage ACAT I and II
- ☐ **Major SYSCOM Roles (SECNAV INST 5400.15B)**
 - Provide support services to PEOs without duplicating management responsibilities
 - Manage / MDA for programs other than those assigned to PEO structure
 - Provide for In-Service Support
- ☐ **Major SYSCOM Support Services (SECNAV INST 5400.15B)**
 - Oversee standard policies, technical processes and core competencies:
 - Systems Engineering
 - Integrated Logistics Support
 - Contracting
 - Finance / Comptroller



Our Mission

“Program Executive Officer Land Systems (PEO LS) will meet the Warfighter’s needs by devoting full-time attention to Marine Corps Weapon Systems acquisition, while partnering with Marine Corps Systems Command, in order to develop and deliver assigned programs.”

PEO LS Program Portfolio

Expeditionary Fighting Vehicle (EFV)



Logistics Vehicle System Replacement (LVSR)



Medium Tactical Vehicle Replacement (MTVR)



Lightweight 155 (M777)



Marine Personnel Carrier (MPC)*

Ground Air Task Oriented Radar (G/ATOR)



Joint Light Tactical Vehicle (JLTV)



Common Aviation Command & Control System (CAC2S)



Outlook

- ☐ **The Nexus of Expeditionary and Combat Vehicle Capability**
- ☐ **New SES Selection Underway**

PEO LAND SYSTEMS MARINE CORPS

IT'S ALL ABOUT THE WARFIGHTER



EFV Video



Questions?

Contact Us

at

PEOLS@usmc.mil

<http://www.marcorsyscom.usmc.mil/peolandsystems>



Background Slides



What is a PEO?

•DOD INST 5000.2

- “...Component Acquisition Executives (CAE) shall assign acquisition program responsibilities to a PEO for ACAT I programs...or any other ***program determined by the CAE to require dedicated executive management***”
- “The PEO shall be dedicated to executive management and ***shall not have other command or staff responsibilities***”

•SECNAV INST 5400.15B

- “PEOs will report directly to the Naval Acquisition Executive for all matters pertaining to acquisition”
- “PEOs devote full-time attention to managing their assigned programs and related technical support resources”

•**General Rule:** PEOs exercise ***authority for management of all ACAT Is & IIs.***



Why PEO LS?

21 Aug 06
MROC decision Memo 47-2006
“The MROC supports the
establishment of a Marine Corps
PEO using the matrixed
organizational concept.”



5 Feb 07
PEO LS Charter
Established
by
ASN(RDA)



1 Oct 07
PEO LS declared
Fully Operational
Capable (FOC)
by ASN (RDA)

*Established to enhance acquisition oversight and focus on an
expanding Marine Corps portfolio of ACAT I & II ground and
amphibious weapons systems.*



Key Foundation Decisions

- Collocate w/ MARCORSYSCOM
- Start with Lean Staff – ***Competency Aligned***
- Value Our Credibility as Bedrock
- Help MARCORSYSCOM Build Technical Authority and Standardized Processes
- Balance Oversight and PM “Command” Responsibility . . . (“Smart Oversight”)
- Innovate Against Program Risk, e.g., Implement Probability of Program Success

Enhanced Company Operations



22 Oct 2008

Vince Goulding
Dir, Experiment Div
vincent.goulding@usmc.mil
(703) 784-4299



MCWL: Headlights of Capability Development



“Conduct **concept-based** experimentation to develop and evaluate tactics, techniques, procedures and technologies....”



Things we keep in mind...

- Concepts are as good as the Marines who execute them
- Marines are expeditionary
- Today's fight is a window to tomorrow's – not the school solution
- Technology is an enabler
- Success in a mature theater....
- Hard issues cannot be ignored

Apr 08: EOS Task to DC, CD&I: “Develop the ECO concept.”

May 08: CG, MCWL designated lead agent

Aug 08: MCWL drafts/CMC signs *A Concept for Enhanced Company Operations*



A Concept for Enhanced Company Operations



"An approach to the operational art that maximizes the tactical flexibility offered by true decentralized mission accomplishment, consistent with commander's intent and facilitated by improved command and control, intelligence, logistics, and fires capabilities."

- A Concept for Enhanced Company Operations



- Generated by an operating force requirement and desire to grow the results of Distributed Operations
 - Recognizes that companies are conducting sustained independent operations traditionally associated with larger formations
- Catalyst for:
 - Shifting experimentation and capability development from mature theater (warfighter support) to austere theater, expeditionary operations (future force development)
 - Better defining specific requirements across DOTMLPF IOT support achievement of Marine Corps Vision & Strategy 2025



ECO Continues Our Focus on the Infantryman...



Distributed Operations 2004 - 2006

- **Squad/Platoon focus** (within company chain of command)
- **Obj: Identify/fix train, man, equip deficiencies at individual and small unit level**
- **Product: Infantry Battalion Enhancement Period Program (IBEPP)**
 - Training, manning, equipping based on deployment schedule
 - New Courses at Training and Education Command
 - Updated battalion T/E
- **Supporting Efforts**
 - Squad Fires (Type 2/3 CAS)
 - Combat Hunter
 - Infantry Skills Simulation Working Group

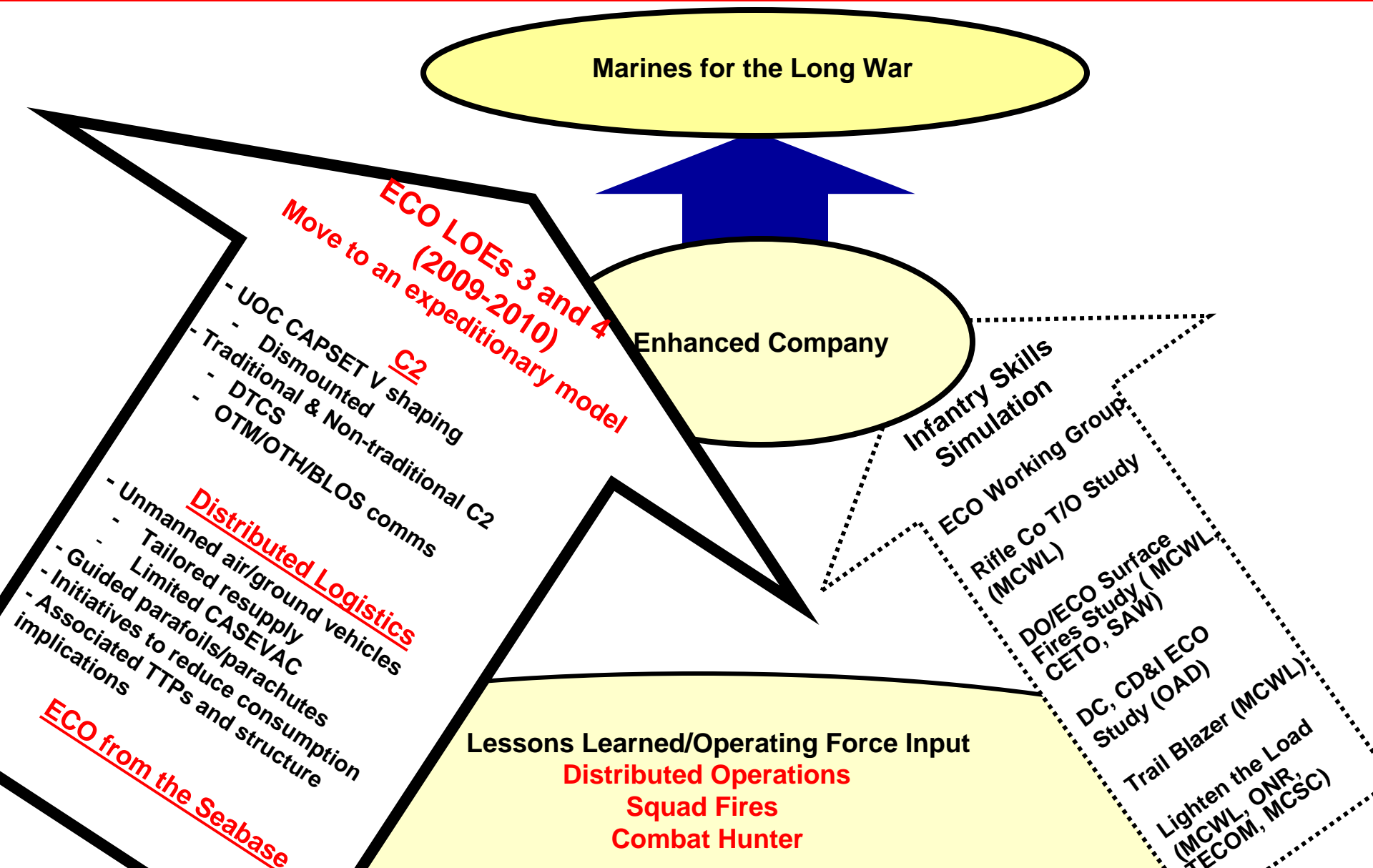
Enhanced Company Operations 2007 - 2010

- **Company focus**
- **Obj: Develop more agile, lethal, survivable company for full range of military operations**
- **Product: Standardized training, manning, equipping**
 - Emphasis on Intell, C2, Logistics
 - **Company-level Intell Cell (CLIC)**
 - **Company-level Ops Center (CLOC)**
- **Preliminary Results**
 - CLIC/CLOC were FOB-centric (warfighter support)
 - Established requirements baseline
 - Marine Corps Intelligence School CLIC training incorporated into PTP
 - Rifle Co T/O, T/E deficiencies
 - MCWL T/O Study
 - CDD OAD ECO Study





Educated approach to an expeditionary capability





ECO LOE 3 Objectives (2009)



Jun- Sep (MWTC)

- 3.1 (CLOC-lite): Identify near term training, manning and equipment that enable dismounted infantry companies to execute C2, ops, intelligence, and fires functions in austere, expeditionary environments (Jul '09).
 - Shape UOC CAPSET V development
- 3.2 (C2/Log): Develop and assess next generation UOC CAPSET V C2 architecture and selected log initiatives (Sep '09).
- 3.3 (Re-supply/CASEVAC): Assess experimental re-supply and CASEVAC capabilities, training requirements, and TTPs/organizational implications associated with Distributed Operations and ECO (Jun '09).
 - Rifle Company T/O



ECO: A unique DOTMLPF Assessment Opportunity

- Doctrine



- Organization



- Training



- Materiel



- Leadership



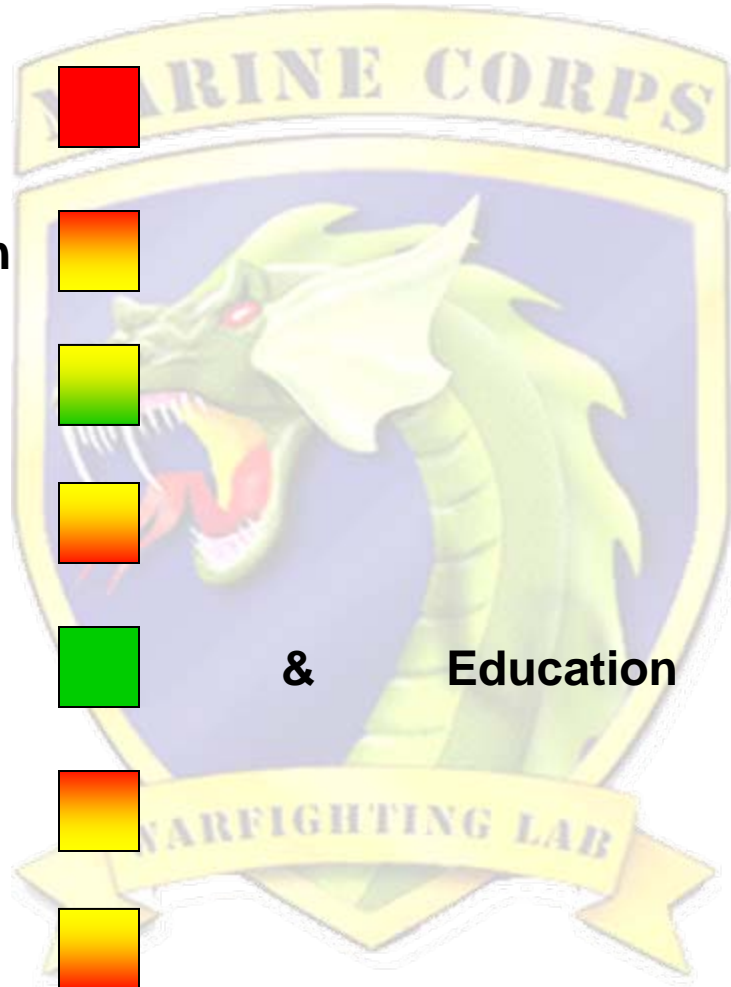
& Education



- Personnel



- Facilities





Doctrine

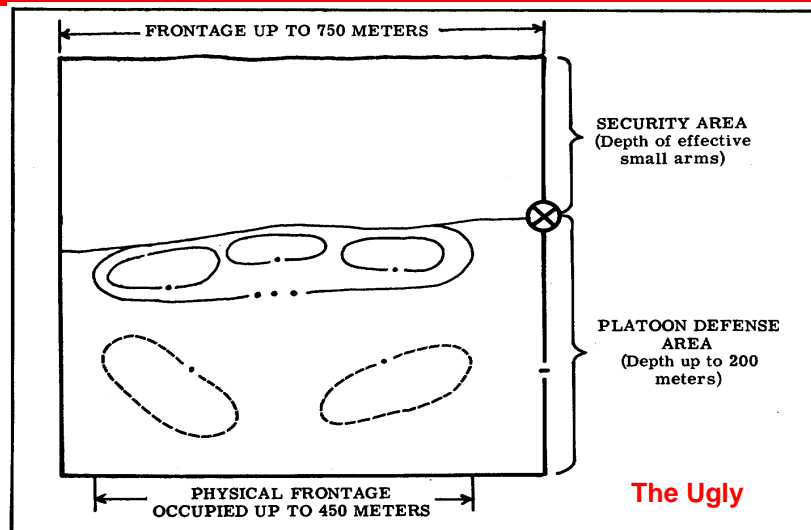
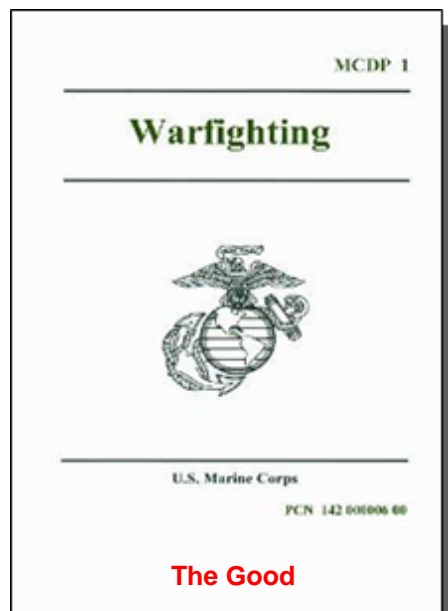


Figure 43.--Frontline Platoon Defense Area.





Organization Now



1st Platoon

2d Platoon

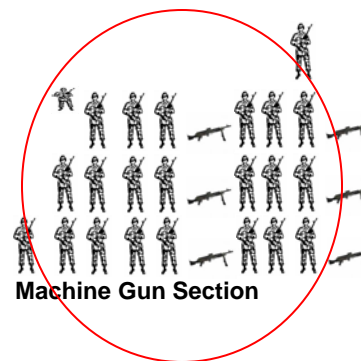
3d Platoon



Assault Section



Mortar Section



Machine Gun Section

Weapons Platoon

6/176

U.S. Marine Corps Rifle
Company per Table of
Organization 1013G

Headquarters Section





Materiel for the Expeditionary Fight





Final Thoughts



- ECO is a logical progression
 - addresses an operational imperative
 - key enabler of Marine Corps Vision & Strategy 2025
 - **opportunity look at the future force across DOTMLPF**

- Objective is ensure a properly trained, adequately manned, superbly equipped company-sized organization...
- ... eminently suited for seabased, expeditionary operations Phase 0 thru Phase 5



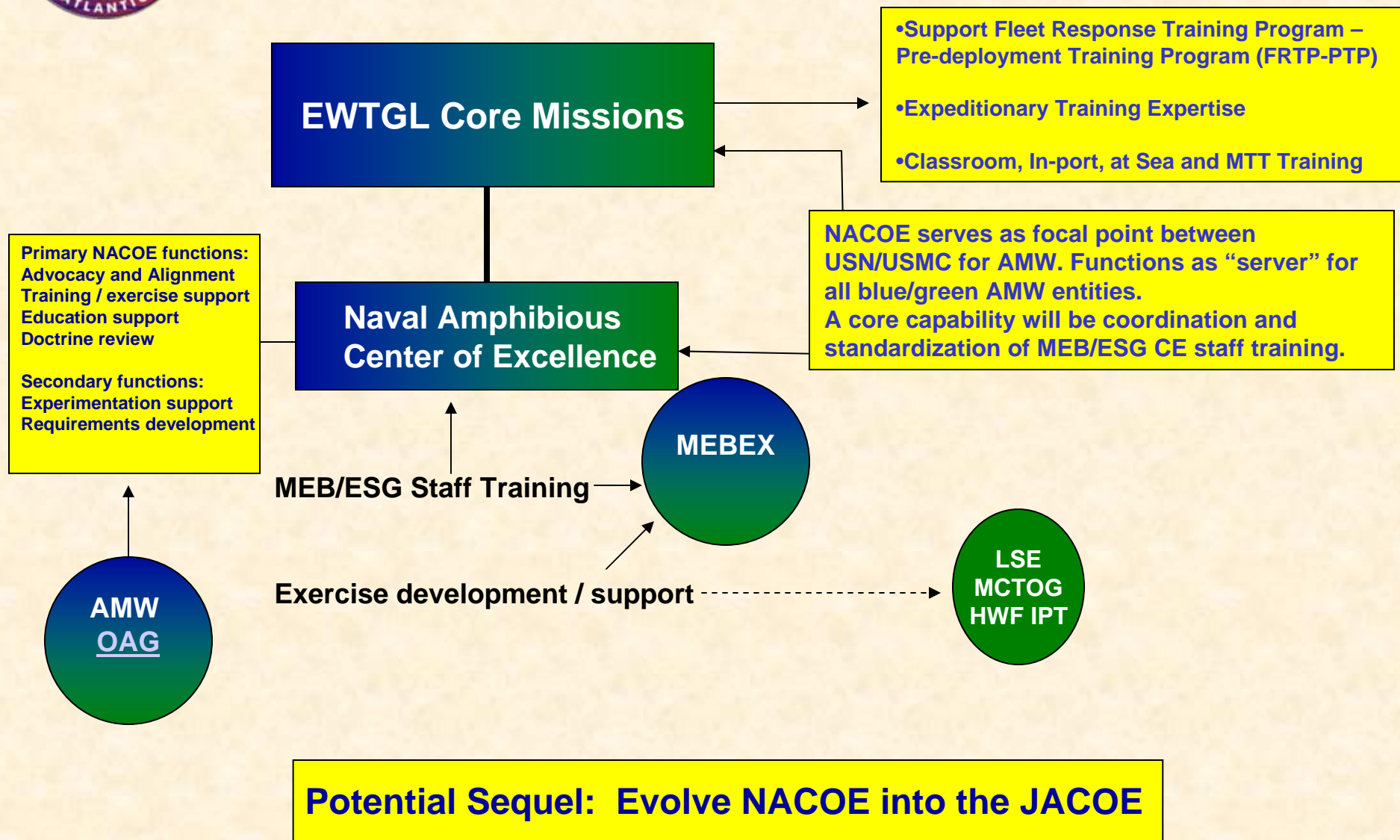
- C2
- Resupply
- CASEVAC
- Reduced demand
- Squad Combined Arms Link



EWGTGLANT

Expeditionary Warfare Training Group, Atlantic







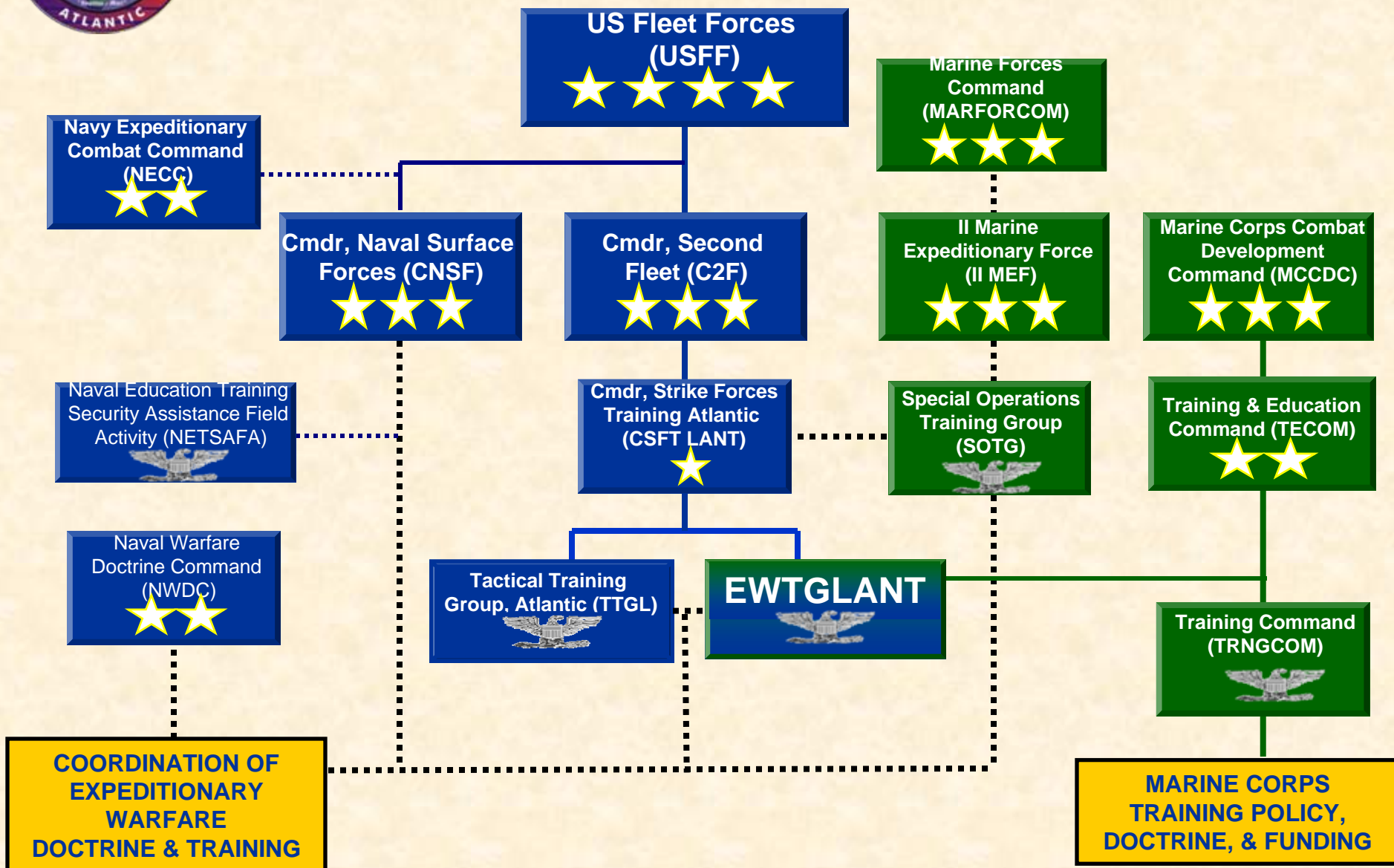
EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC

EWTLANT MISSION

“TO CONDUCT TRAINING AND INSTRUCTION IN THE DOCTRINE, TACTICS, AND TECHNIQUES OF NAVAL EXPEDITIONARY WARFARE, WITH A FOCUS ON AMPHIBIOUS OPERATIONS, IN ORDER TO SUPPORT OPERATIONAL COMMANDERS IN MAINTAINING FORCES READY TO PROJECT MILITARY POWER FROM THE SEA.”



EWTGLANT Relationships





Arc of Instability

Range of Military Operations

- Conflict
- Humanitarian Assistance
- Disaster relief
- Security Cooperation
- Peace keeping
- Presence
- Evacuation
- Reinforcement

How much of this area is accessible:

by conventional land and air forces?

by amphibious forces?

by self sustaining amphibious forces?

through forcible entry amphibious forces?

given our current readiness, recent training and structure?



Vision and Strategy 2025

“We will be ...

- Deployed forward with relevant and timely capabilities
 - Maximize speed and freedom of action through seabasing, while minimizing footprint ashore.
 - Conduct joint forcible entry operations from the sea.
 - Engage in sustained operations ashore, as required.
- Focused on executing sustainable expeditionary operations

These are not capabilities inherent in our current MEU / SG

What are we doing today to ensure we have this capability in 2025?

Are we doing enough?

Who speaks for the amphibious community?



Core Competencies

- ☐ Persistent forward naval engagement
- ☐ Forces and specialized detachments for service aboard naval ships, on stations and for operations ashore
- ☐ Conducts joint forcible entry operations from the sea and develops landing force capabilities and doctrine
- ☐ Conducts complex expeditionary operations in the urban littoral and other challenging environments
- ☐ Leads joint and multinational operations and enables interagency activity

Where are we focused today?



Gaps

- **Loss of service level advocacy for amphibious issues.**
 - **ESG CE \neq PHIBGRU**
 - ESG CE Operationally focused and tasked
 - **MEF(Fwd) \neq MEB**
 - No standing MEB Staffs
 - MEF(FWD) not focused on amphibious issues
 - **Elimination of annual Navy-Marine Corps Amphibious Board**
- **Recent focus on operational requirements have distracted the services from a key core competency.**
- **No large scale amphibious exercises since 9/11.**
- **Loss of experience and expertise (retirements, reassignments, latency)**
- **No single “Naval” entity to focus amphibious efforts.**



Inconsistencies

- **F RTP / PTP differences**
 - East Coast / West Coast / Pacific
- **Training and education standardization**
- **Amphibious education career progression**
 - TBS → EWS → C&S
 - SWOS → War College
- **Doctrine**
 - Navy, Marine Corps, Joint
- **Nesting emerging requirements/technologies**
 - V22, C2 Systems, ...
- **Amphibious lessons learned**
- **Tactics, techniques and procedures & Best practices**



Guidance

“...increase naval force capability...advance the amphibious and expeditionary capabilities of the Combatant Commanders...strengthen concepts and training that enhance naval contributions to the Long War... Continue to develop centers of excellence.”

Commandant's 2006 Planning Guidance

“...enhancing our capability to conduct expanded core capabilities ...some capabilities require immediate attention, in particular our littoral capabilities...expand and refine our training to include additional skills while honing our ability to command operational level campaigns.

ADM Roughead brief to the House Armed Service Committee (13 Dec 07)



Most Recently

“...We must reconnect to our naval character and proficiency, ensuring our Marines and Sailors are prepared to fulfill our role as an amphibious force in readiness and fully able to "fight from the sea"...”

CMC Washington 301724Z JUL 08



How to best prepare

1. Improve what we are already doing
 - Standardize/ improve current MEU/SG predeployment training
 - Re-inject amphibious requirements
2. Reestablish large scale Naval training and exercises
 - MEB and ESG staff training
 - Amphibious assault exercises
3. Build an organization to speak for the amphib community
 - Naval in philosophy
 - With Service level authorities and visibility across the DOTMLPF



EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC

Comprehensive approach

Three Lines of Operation

Institutional Commitment / Process

Assessment / DOTMLPF

Executive level venues (Warfighter, OAG, COE)

Operational/Staff Level Training

CPX, Wargames, JTFEX, Synthetic, Synthetic/Live, Live

Tactical / Unit Level Training

TCAT, FRTP-PTP, TTPs, Academics

**Process continues and adjusts with an assessment
of the current state of MEB/ESG
amphibious assault capability and capacity**



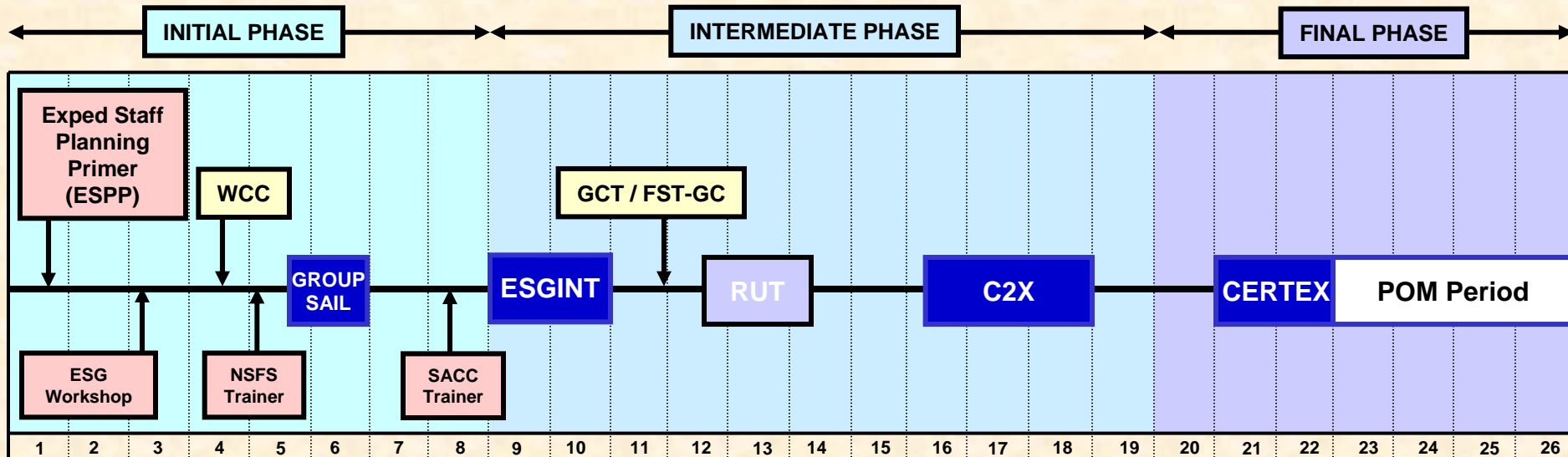
Initiatives

- FRTP-PTP
 - MOU/MOA
 - C2F – II MEF Instruction
- MEB Forcible Entry / Amphibious Operations Exercise
 - Skill set training, planning, execution
- Establishment of Naval Amphibious Center of Excellence
- Operational Command Post Exercises
 - 1NCD, ESG-2, COMUKAMPHIBFOR
- NATO Conferences
 - NATO Alligator Conference
 - NATO Standardization Agency
 - Amphibious Operations Working Group
 - Joint Intelligence Working Group



EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC

ESG Fleet Response Training Plan (F RTP) MEU Predeployment Training Program (PTP)

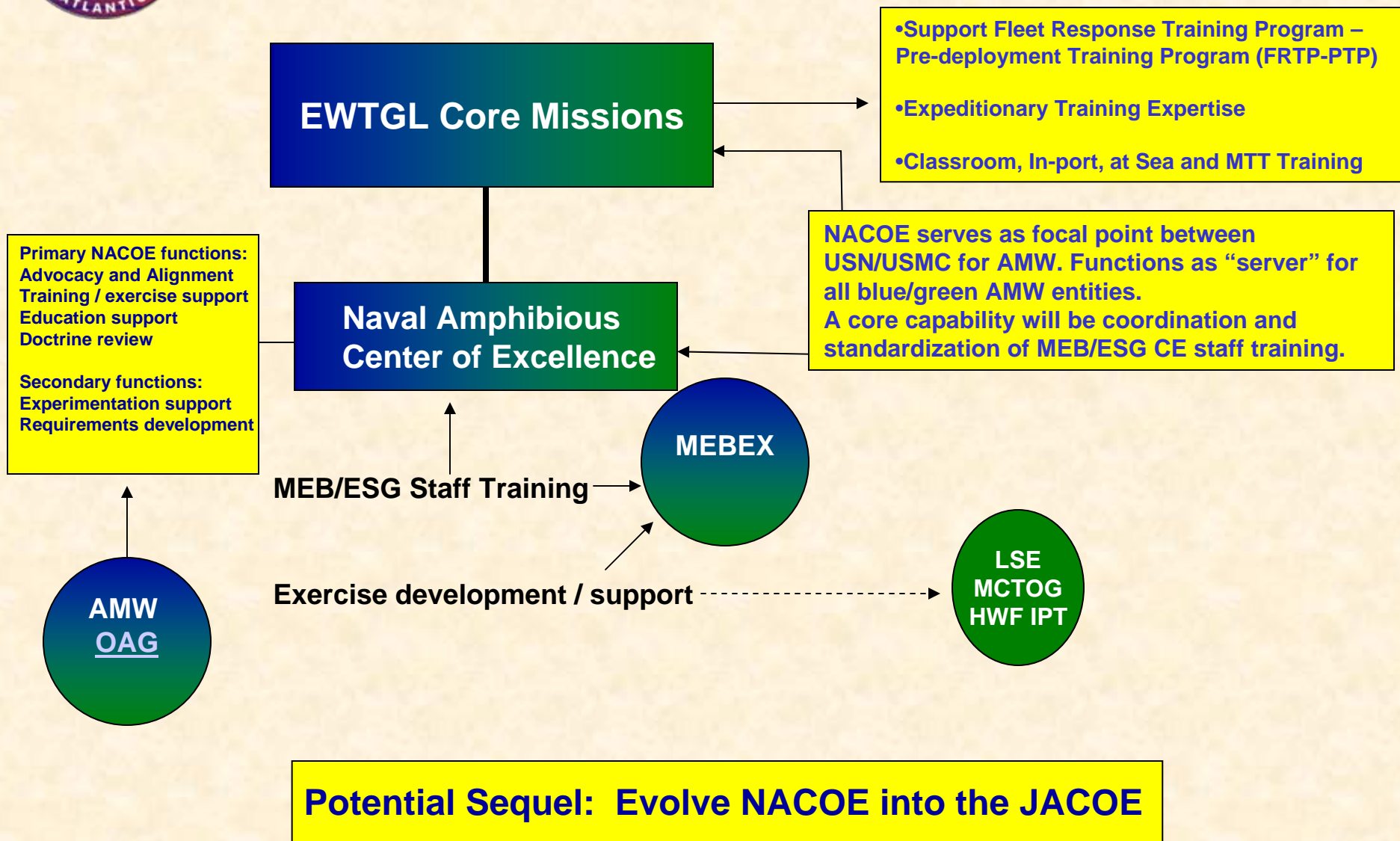


ESPP: Expeditionary Staff Planning Primer
ESG: Expeditionary Strike Group
WCC: Warfare Commander Conference
NSFS: Naval Surface Fires Support
SACC: Supporting Arms Coordination Center
ESGINT: ESG Integrated Training
GCT: Group Commander Training
FST-GC: Group Commander Fleet Synthetic Training
RUT: Realistic Urban Training
C2X: Composite Training Unit Exercise
CERTEX: Certification Exercise
POM: Pre-Overseas Movement

C2X	Integrated At-Sea events
RUT	MEF events
GCT	TTGL-sponsored events
MEU	EWTGL-sponsored events
POM	Other events

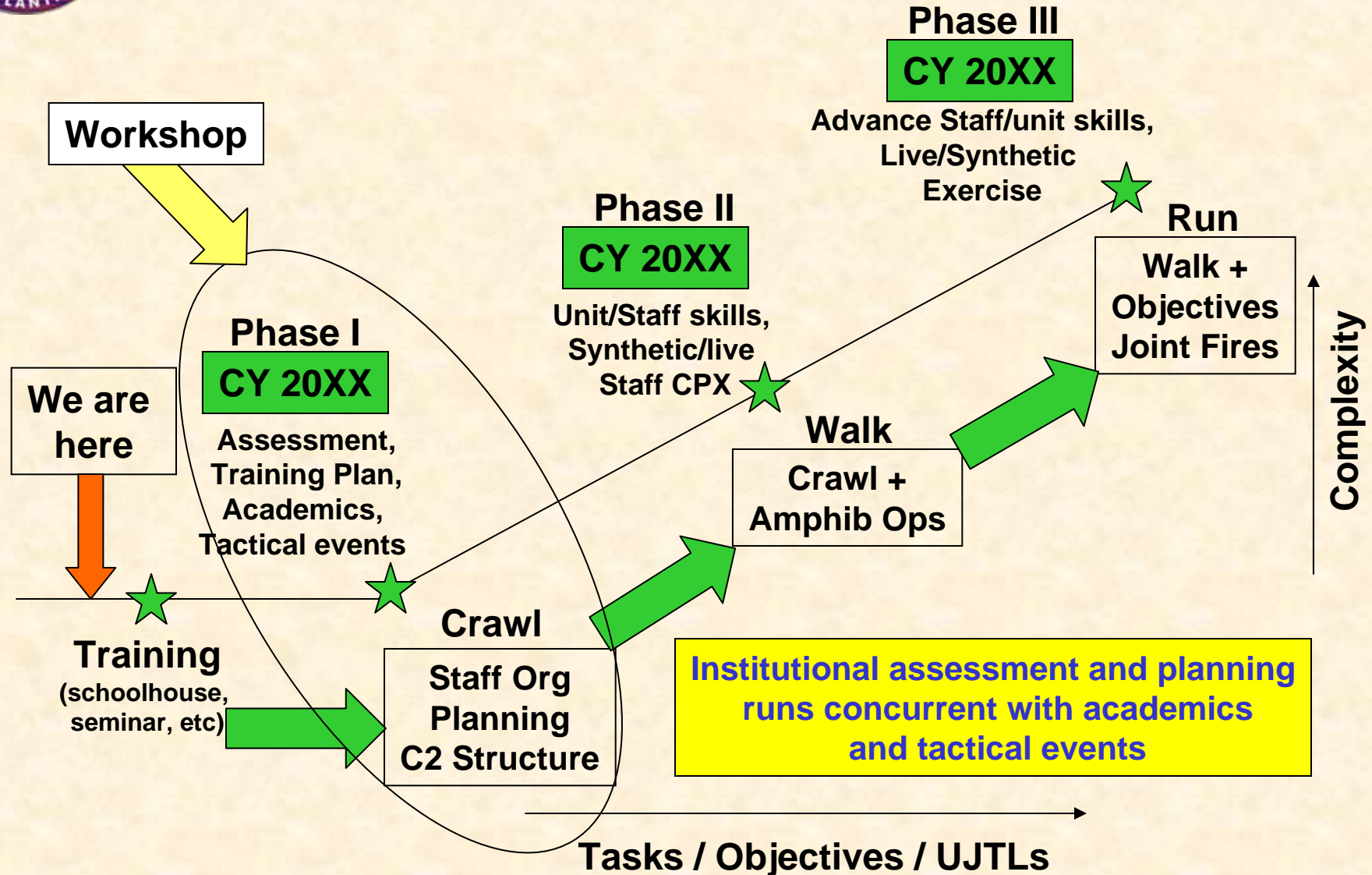


EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC



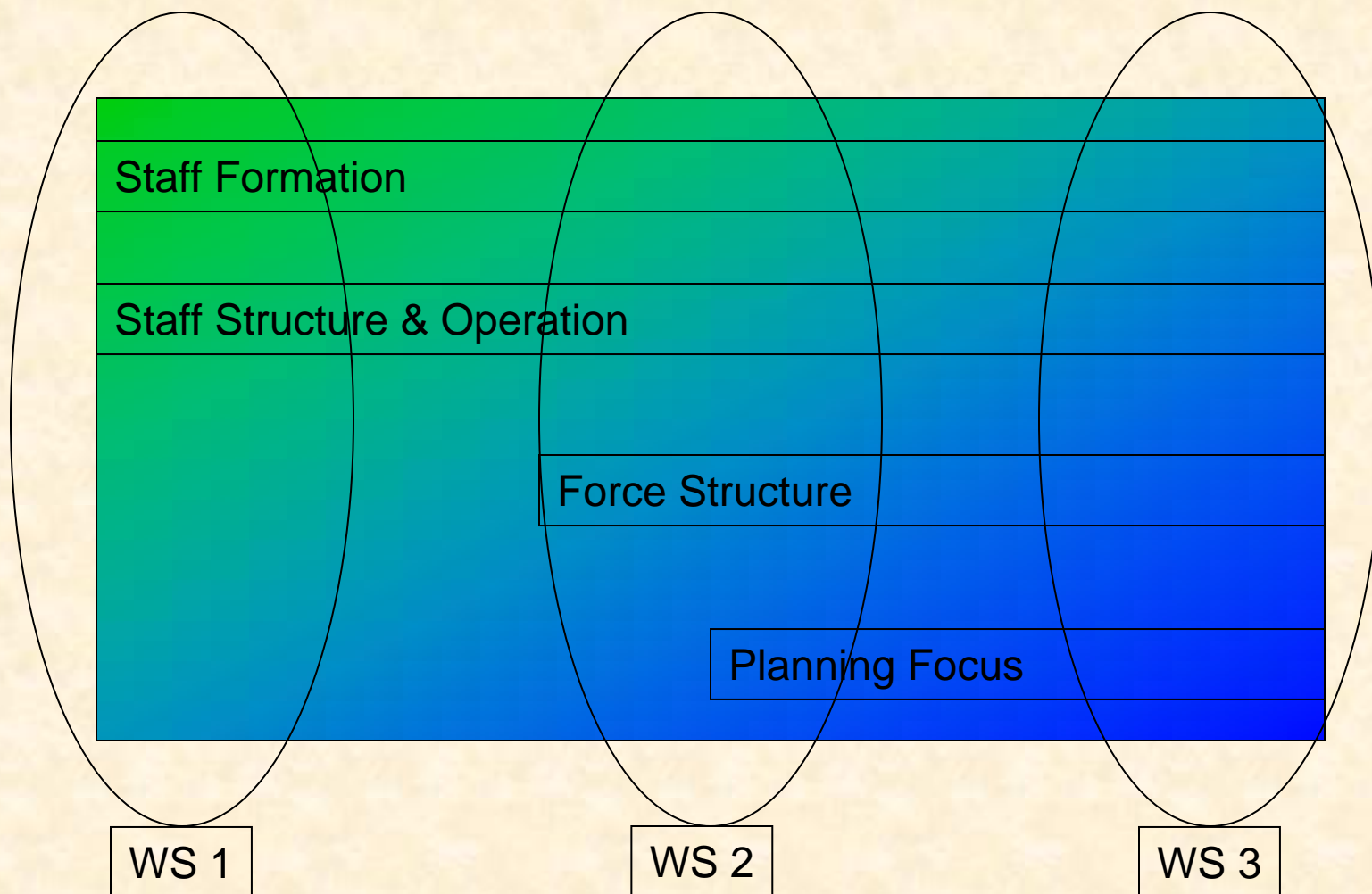


Phased Building Block Approach





Workshop Progression





Training Objectives

- USN
 - Validate Battle Staff effectiveness
 - Validate establishing directives
 - Coordinate and plan in conjunction with Marine staff
- USMC
 - Validate structure and organization
 - Train MEB staff for forcible entry operations
 - Coordinate and plan in conjunction with Navy staff

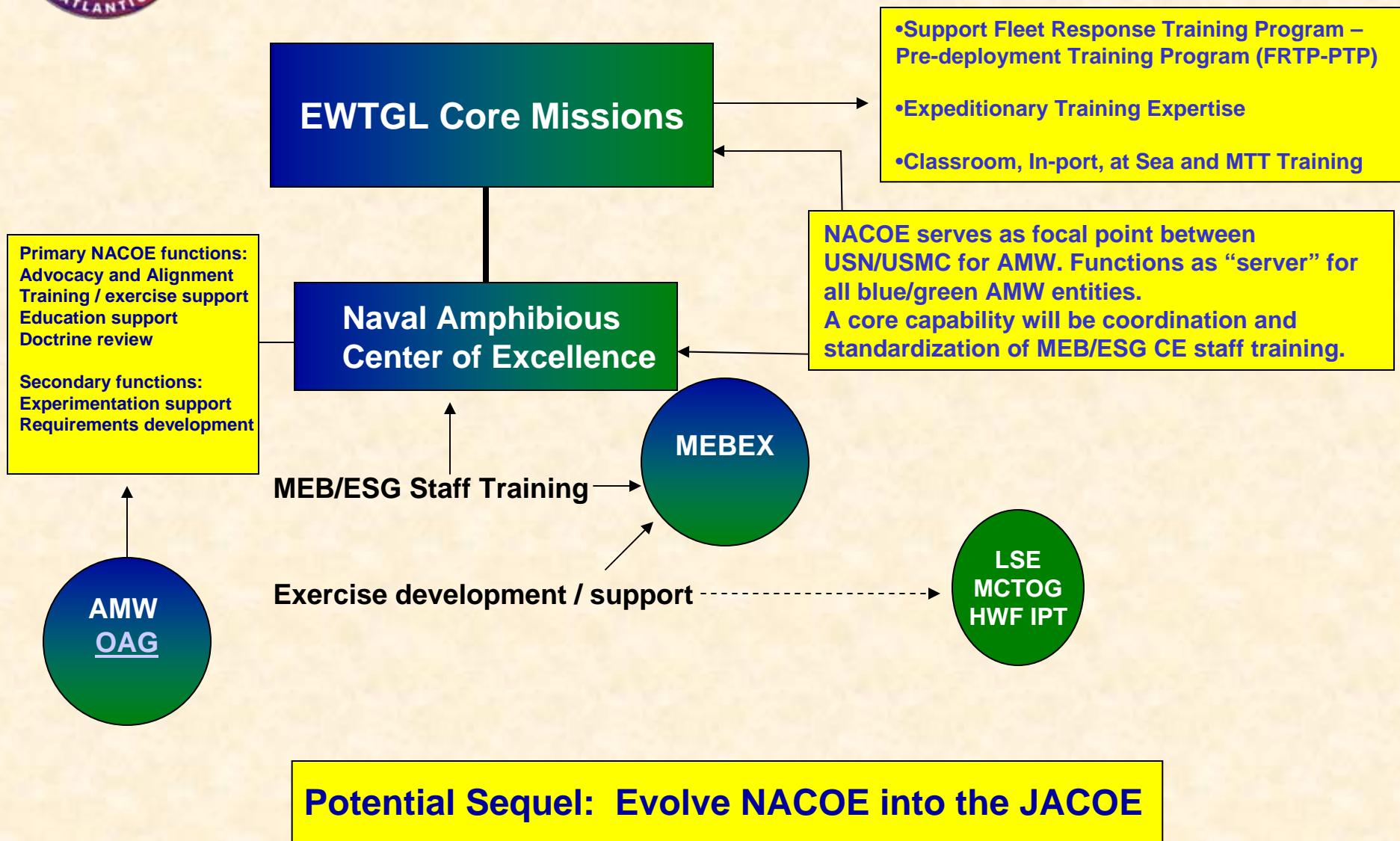


Endstate

- Develop a cadre of experienced officers and senior enlisted personnel with exposure / experience in amphibious MEB/ESF forcible entry operations
- Periodic amphibious MEB/ESG C2 events (synthetic) to establish depth and enhance expertise across USN/USMC
 - Include deploying ESG participants where FRTP-PTP permits
- Routinize concurrent development of other AMW skill sets in existing FRTP-PTP venues
 - Ship-to-shore movement planning and execution, amphibious craft loading and unloading, supporting arms and integrated fires during ESG C2X and CERTEX events
- Position for a future recurring live amphibious MEB/ESG exercises
 - Including amphibious MEB/ESG training capability



EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC





Mission

The NACOE serves as a focal point of amphibious issues for the Navy, Marine Corps and other services and agencies in order to ensure the services are capable of fulfilling the amphibious requirements of the Maritime Strategy, Combatant Commanders' Operational Plans, and future national security requirements.



How the NACOE addresses the problem

The NACOE provides service-level *advocacy, coordination, and integration.* Specifically:

- Host and represent AMW community on Advocate forums
- Develop and coordinate training and education continua
- Develop a collaborative AMW Lessons Learned data base
- Draft and review Doctrine and Tactics, Techniques and Procedures
- Develop and review MET based training documents
- Assist in development / tracking of requirements
- Represent community in experimental and synthetic development and exercises

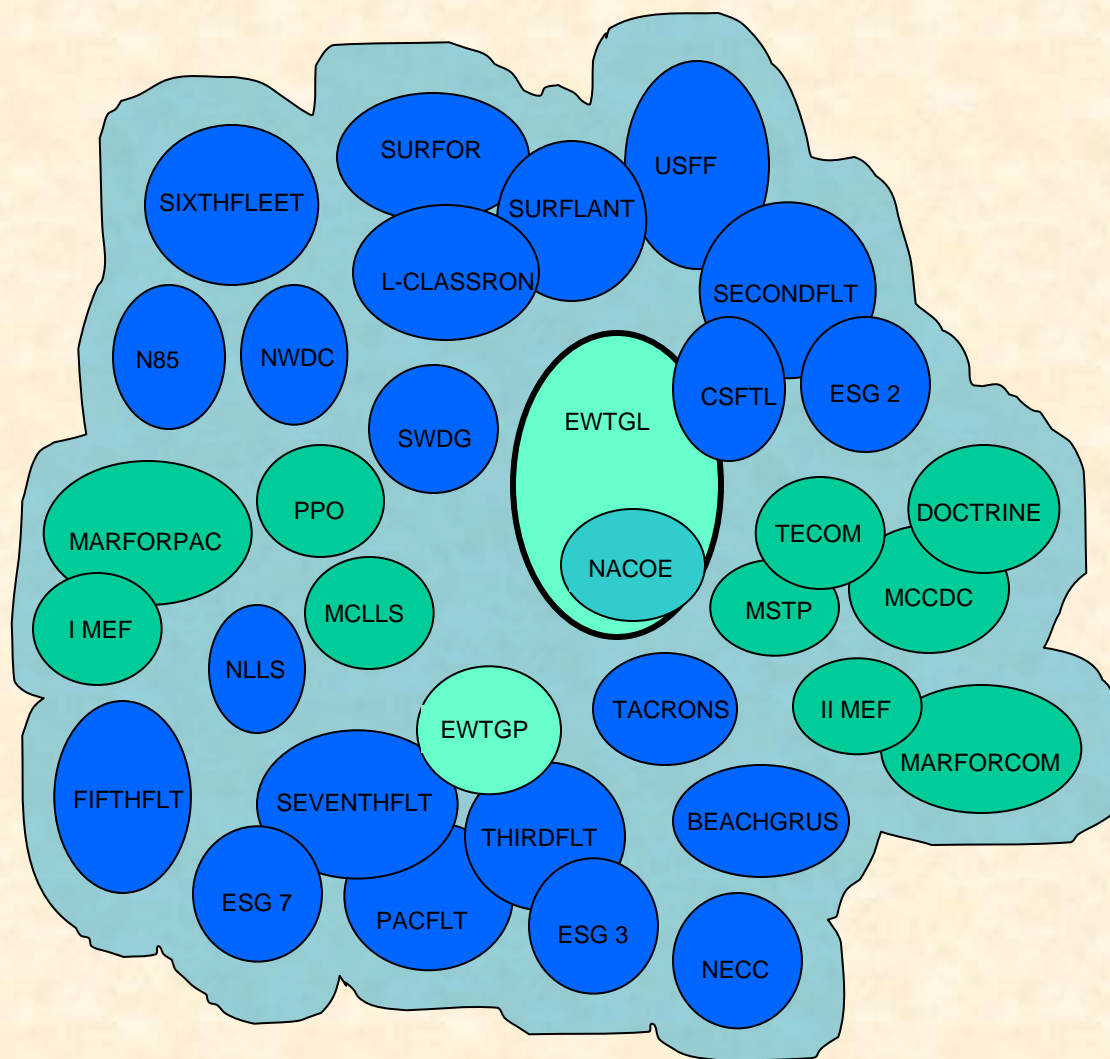


Functions and Tasks

- Advocacy
- Training and Education
- Lessons Learned and Best Practices
- Doctrine and Tactics, Techniques and Procedures
- Policy
- Requirements and Experimentation



AMW Community of Interest



- Matrix NACOE leverages existing knowledge and experience in the “AMW Community of Interest”
- Build robust collaborative website: Key issues, lessons learned, discussions, conference results, links to other sites, upcoming events, curriculum, planning, etc.
- Streamline the physical size of the NACOE
- Need TAD budget to foster and maintain support base



Phase 0 -

Minimum capability requirements

Tasks

- Build/manage collaborative AMW website
- Focus on AMW OAG and Amphibious Board coordination
- Develop Lessons Learned and add to website
- Parallel effort with MEB/ESG CE training process curriculum; use this package as basis for AMW AE planning courses in EWTGs
- Publication review
- Leverage EWTL/P for training capacity

Manning

- Military: 4-6 both internal and additional structure
- Civilian: 2-4 contractors to eventually become NSPS

Budget

- Plus-up EWTGL baseline and add money for contractors and TAD

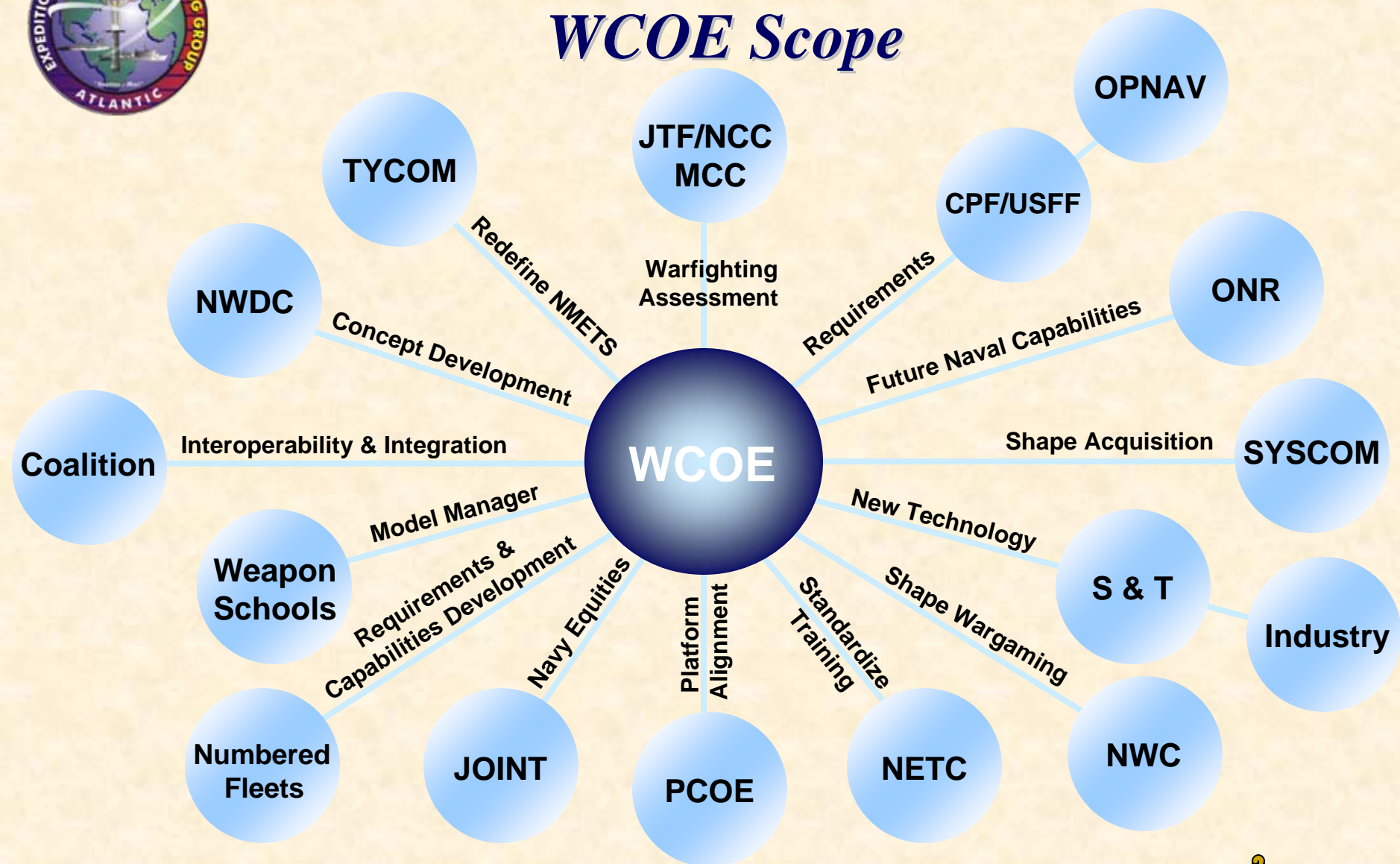


Challenges of being “Naval”

- Two chains of command
 - Operational vs supporting establishment
- Myriad of organizations with competing requirements
 - Similar functions but stovepiped in approach
- Two (and more) pots of money
 - No single source in either service
- Two manpower systems
 - No amphib Sailor / Marine in assignment process
- Two NMCIIs
- Two different approaches to COEs



WCOE Scope

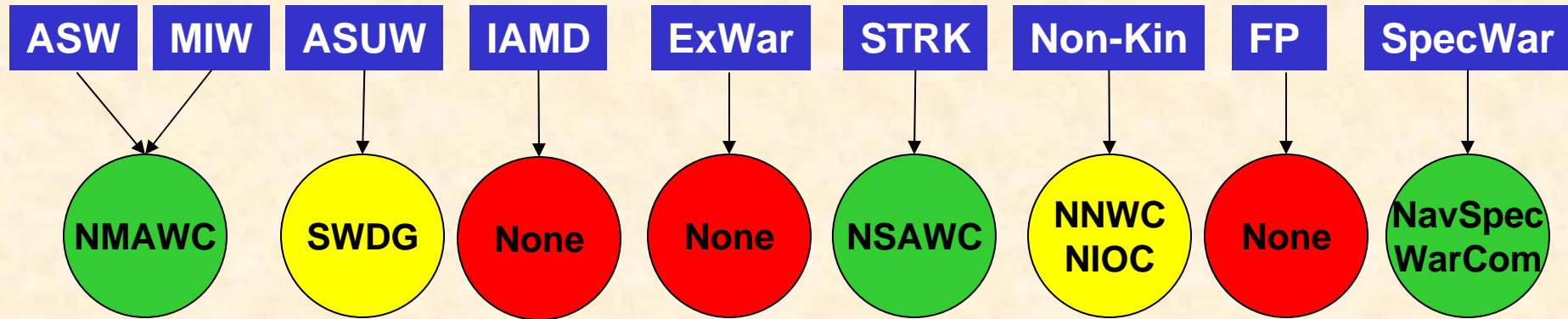


Visibility across DOTMLPF



EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC

Critical Fleet Warfighting Mission Areas



WCOE providing mission area coverage

Significant Coverage

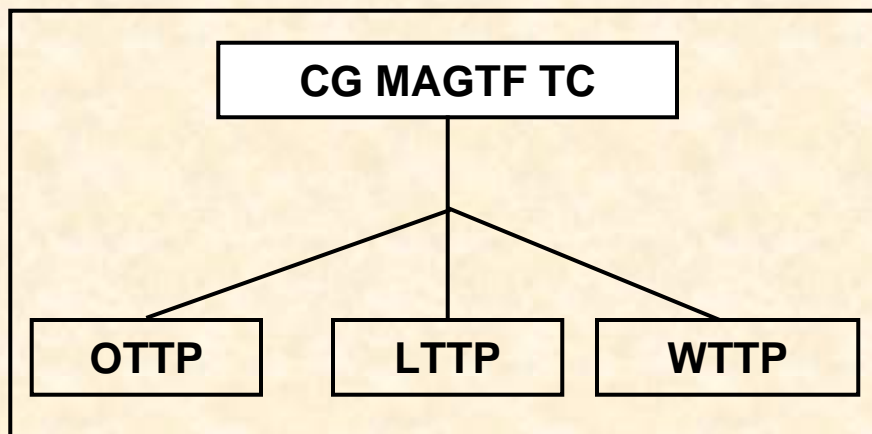
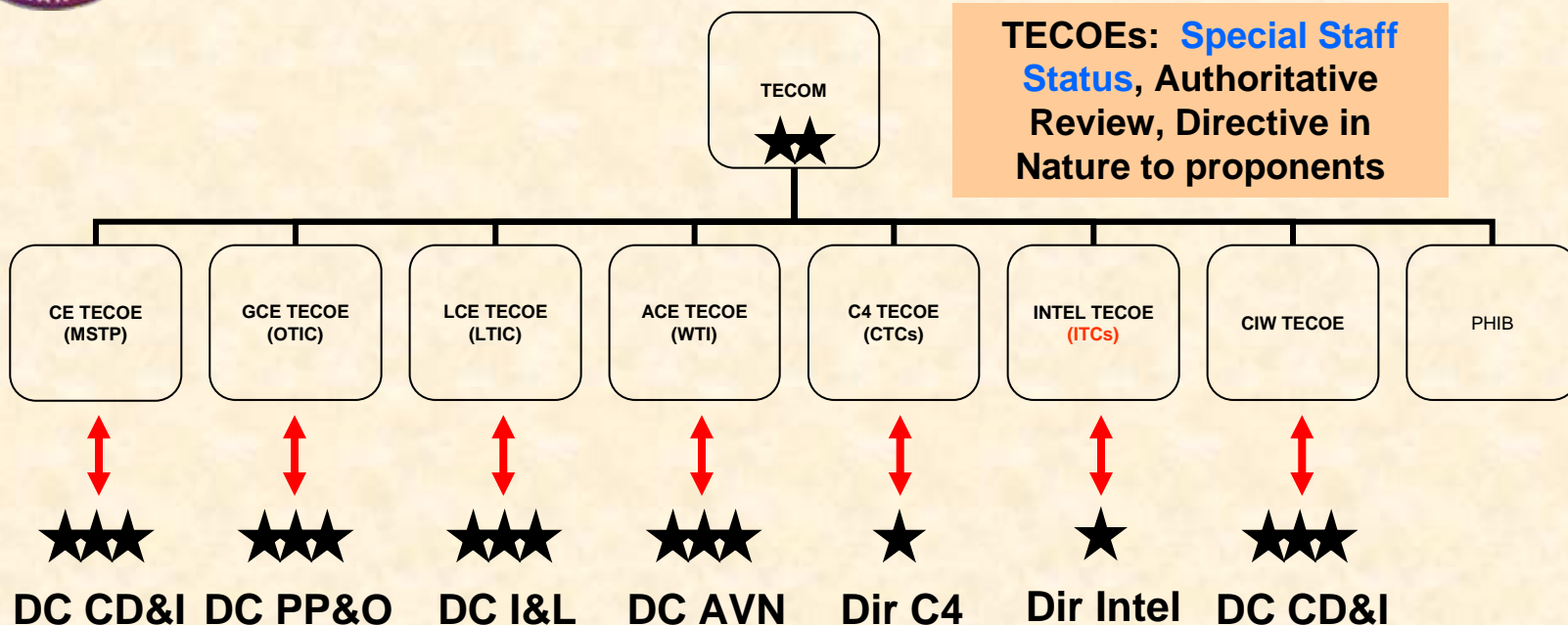
Limited Coverage

No Coverage

Pressing Needs for Several Warfare Areas

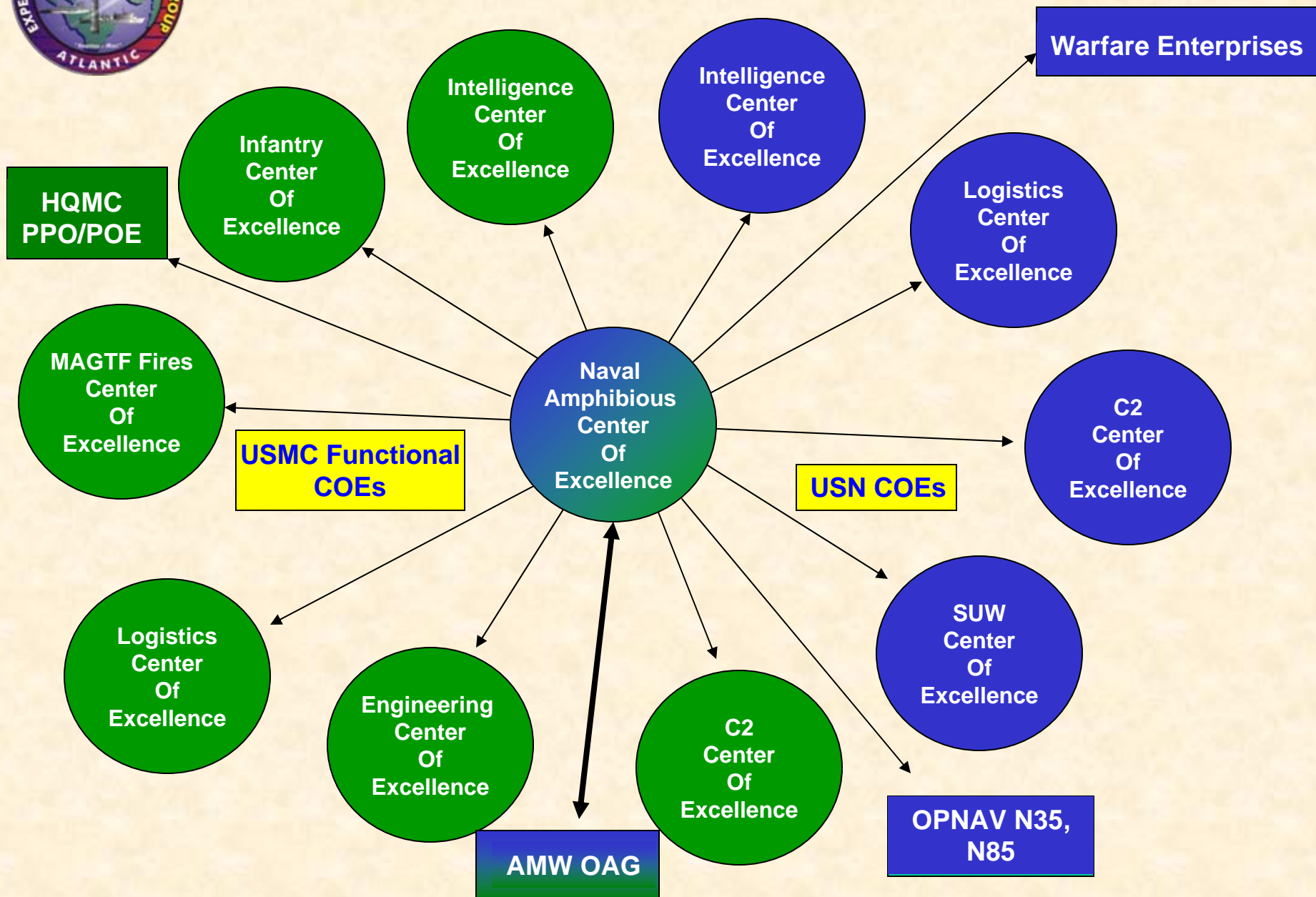


Functional TECOE Realignment





EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC





EXECUTIVE COMMITTEE

KEY STAKEHOLDERS

ESG 2, ESG 3, ESG 7
CG I MEF, CG II MEF, CG III MEF

COMMAND AND DOCTRINE CHAIR: ESG 7

CG I MEF ESG 2 CG II MEF ESG 3 CG II MEF

STANDING WORKING GROUP (SWG) - OUTPUT: TOP TEN COMMAND DOCTRINE LIST

MAGTF OPERATIONS CHAIR: CG III MEF

CG I MEF CG II MEF
THREE ONE MEU ELEVENTH MEU FIFTEENTH MEU THIRTEENTH MEU TWO SIX MEU TWO TWO MEU TWO FOUR MEU

STANDING WORKING GROUP (SWG) - OUTPUT: USMC MAGTF OPS TOP TEN

HM AND E CHAIR: COMLSDLPRON

COMPHIBRON ONE COMPHIBRON TWO COMPHIBRON THREE
COMPHIBRON FOUR COMPHIBRON FIVE COMPHIBRON SIX
COMPHIBRON SEVEN COMPHIBRON EIGHT COMPHIBRON ELEVEN

STANDING WORKING GROUP (SWG) - OUTPUT: HM AND E TOP TEN LIST

BEACH/ LITTORAL CHAIR: ESG 2

COMCMRON ONE CNBG ONE COMLCRON CNBG TWO COMCMRON TWO
ACU ONE ACU FIVE ACU TWO ACU FOUR
BMU ONE PHIBCB ONE BMU TWO PHIBCB TWO

STANDING WORKING GROUP (SWG) - OUTPUT: BEACH/ LITTORAL TOP TEN

AIR OPERATIONS CHAIR: COMTACGRU ONE

TACRON ELEVEN TACRON TWELVE
TACRON TWENTY ONE TACRON TWENTY TWO

STANDING WORKING GROUP (SWG) - OUTPUT: TOP TEN AIR OPS LIST

TRAINING AND READINESS CHAIR: ESG 3

EWTGLANT EWTGPAC

COMPHIBRON ONE COMPHIBRON TWO
COMPHIBRON THREE COMPHIBRON FOUR
COMPHIBRON FIVE COMPHIBRON SIX
COMPHIBRON SEVEN COMPHIBRON EIGHT
SWOS COMPHIBRON ELEVEN SWDG

STANDING WORKING GROUP (SWG) - OUTPUT: TOP TEN TRAINING AND READINESS LIST

C5I CHAIR: COMLHDON

USMC C5I
COMPHIBRON ONE COMPHIBRON TWO COMPHIBRON THREE
COMPHIBRON FOUR COMPHIBRON FIVE COMPHIBRON SIX
COMPHIBRON SEVEN COMPHIBRON EIGHT COMPHIBRON ELEVEN

STANDING WORKING GROUP (SWG) - OUTPUT: TOP TEN C5I LIST

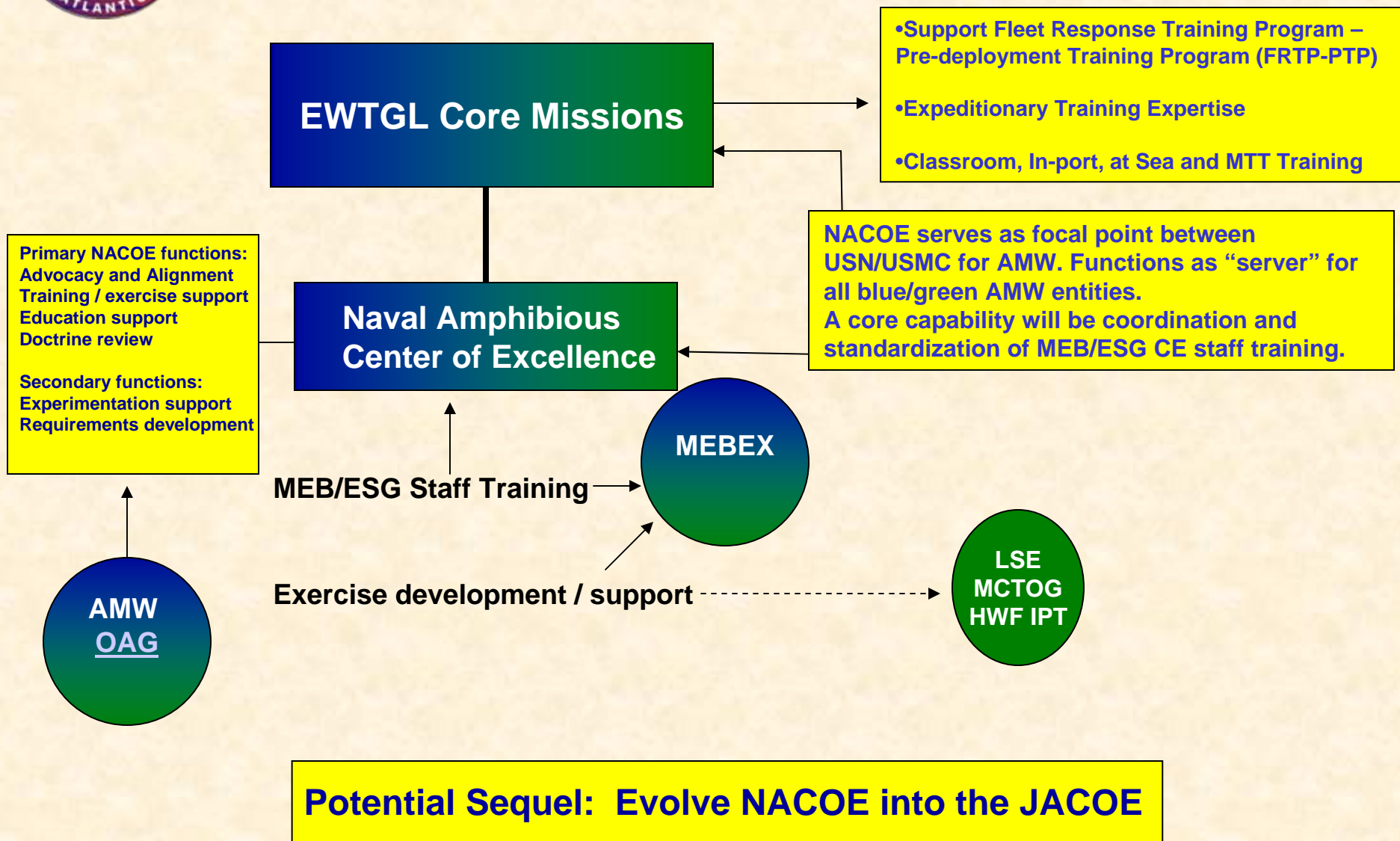


Key points

- **Expanded USMC participation as voting members**
 - Will continue to strengthen this relationship
 - MEF reps “got it”, now back-briefing their CGs
 - Need more HQMC/PPO and OPNAV/N3 involvement on operational issues due to expanded scope of AMW OAG
- **Inclusion of Item 16 in top 20 list is significant**
 - Now we must build on this “wedge”
- **USMC representation requested for briefs to SURFLANT and SURFOR**
- **Recognition of requirement for a NACOE-like capability, especially to coordinate non-materiel solution issues**



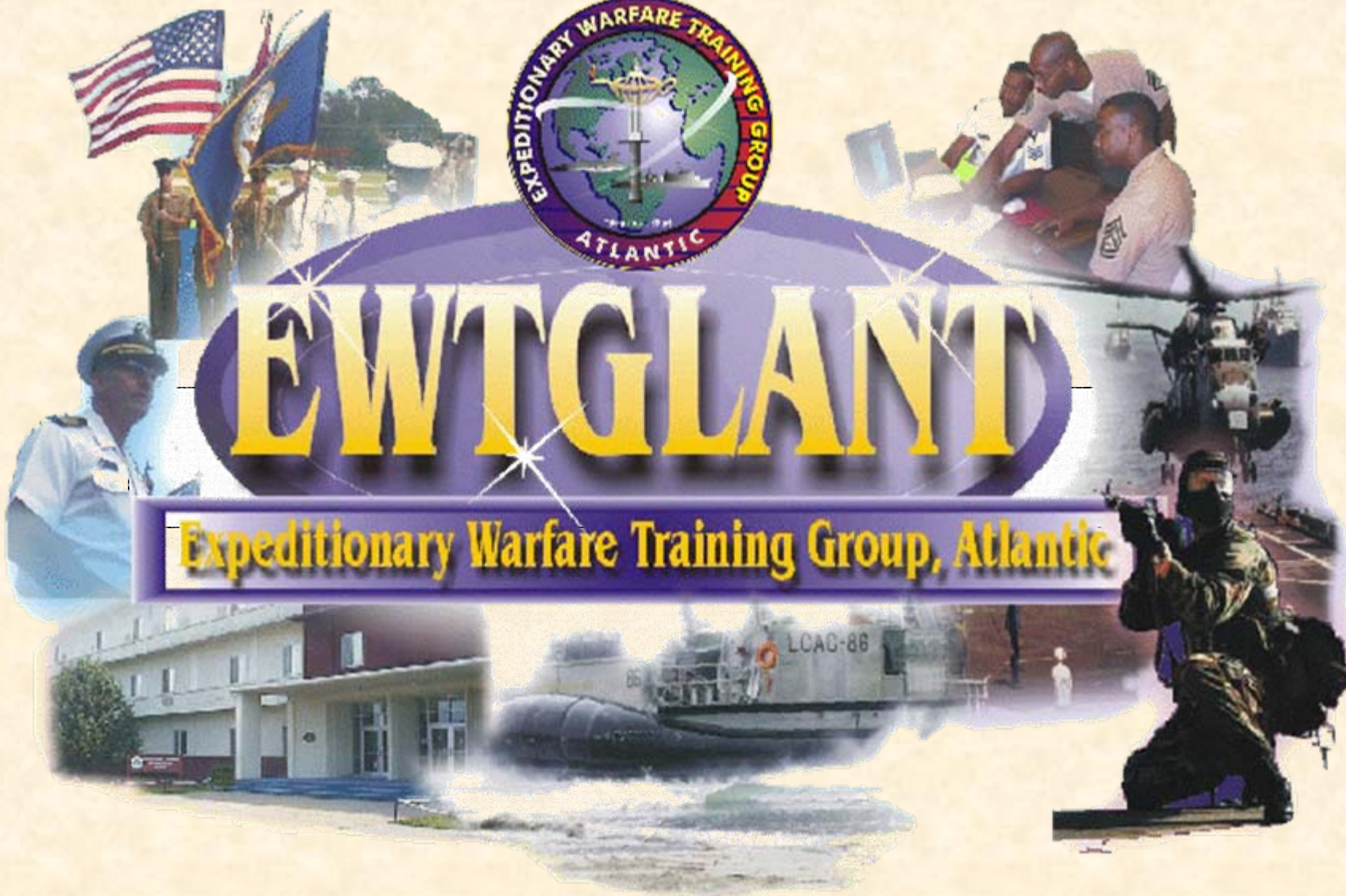
EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC





EWTGLANT

Expeditionary Warfare Training Group, Atlantic





- Back-up slides



AMW OAG 2008-01 EXECUTIVE COMMITTEE RESULTS

FINAL TTPL AMW OAG 08-01

1	LSD MIDLIFE (INCLUDING REPAIRS) (HME)
2	LHD MIDLIFE (INCLUDING REPAIRS) (HME)
3	LCAC SLEP / READINESS (BNL)
4	LCU SUSTAINMENT / REPLACEMENT (BNL)
5	WELIN LAMBIE BOAT DAVIT (HME)
6	IMPROVED L-SHIP SELF DEFENSE (CAPSTONE, AIP, FAC, FIAC) (C5I)
7	GIG E LAN (C5I)
8	CBSP (IP BANDWIDTH) (C5I)
9	FLIGHT SAFETY PALS / NVD / SATCC (AVI)
10	ESG AND USMC C5I INTEGRATION (FIELD / BACKFIT TO GREEN BASELINE) (C5I)
11	INLS PROCUREMENT (BNL)
12	STUASS / TIER 2 UAS ESG INCORPORATION (ISR) (AVI)
13	LANDING FORCE OTH TACTICAL COMMS - HF ALE AND EMUT (C5I)
14	PROPULSION DIESEL / SSDG SUPPORT (HME)
15	L CLASS CAPABILITY TO LOAD USMC EQUIPMENT (HME)
16	ESG (CE) / MEU / MEB TRAINING (TNR)
17	MV 22 / JSF INTEGRATION (AVI)
18	OPTAR SHORTFALLS (BNL)
19	TDL LSD 41/49
20	AMW HF COMMS AND HFRG (C5I)



AMW OAG 2008-01 EXECUTIVE COMMITTEE RESULTS

SWG CHAIR POLICY ITEMS BREAKOUT

1. Establish a Blue Baseline for C5I
2. Establish a Blue/Green command and control space utilization plan and configuration control.
3. ESG/EOD personnel resourcing
4. Update TADIL Links (LSD) in ROC/POE IOT support sea-basing and global fleet station.
5. Re-assess policy for monorails for L Class ships.
6. 11 meter RHIBs outfitting on Big Decks
7. Shoring requirements for L Class (wet well rqmts)
8. MOGAS policy – re-assess rqmts
9. FIAC Training – tie to self defense
10. ESG (command element/PHIBGRU – future of the command element
11. Engineman manning on LSDs
12. ESG Mission Definition
13. ESG Manning
14. ESG TACPUB Review and Revision
15. Sea Basing, L-Class ships



Background

- **Combatant Commander OPLANs require forcible entry amphibious capability at MEB/ESF level**
- **Commitments to support OEF and OIF have impacted the ability of the USN and USMC to conduct brigade (MEB) level amphibious operations, resulting in the atrophy of critical C2 skill sets**
 - **Majority of USMC have done multiple tours in OEF and OIF but little experience aboard amphibious platforms**
- **Last East Coast MEB-size exercise was conducted in 2001 (pre-9/11)**
- **Focus on OEF / OIF missions has also detracted from traditional amphibious skills above the MEU level**
- **Restructuring of CPG-2 and CPG-3 to flag-level ESG Command Elements has further impacted AMW knowledge base**
- **Evaporation of Navy AMW experience; fewer naval personnel with hands-on experience conducting MEB level amphibious operations**

Objective: Rebuild and attain the necessary skill sets to enable the Navy and the Marine Corps to exercise effective C2 to execute successful amphibious forcible entry operations



Problem

A degraded capability to conduct amphibious operations above the MEU/ESG level.

“...the skills needed for combined arms maneuver and amphibious warfare have deteriorated.”

Commandant's 2006 Planning Guidance

A lack of focus and fully integrated effort between USN/USMC to address amphibious warfare issues.

“... the Navy has not yet established a specific implementation goal for expeditionary strike groups and other forces.”

GAO Report Feb 2008



Specified Tasks

- Review amphibious doctrine, policies, and resourcing
 - Assess the shifting dynamics of maritime warfare
 - Ensure amphibious tenets keep pace with evolving capabilities, technologies, allies and foes
- Re-invigorate educational institutions and the professional education of our warfighters in amphibious operations
- Complement education with specific and focused training



Tasker Definition

“Refine the scope, responsibilities, authorities, and command and control for established warfare centers of excellence (WCOE). Make recommendations concerning the requirement to create additional WCOEs and recommendations to eliminate or realign legacy related organizational constructs/functions.”



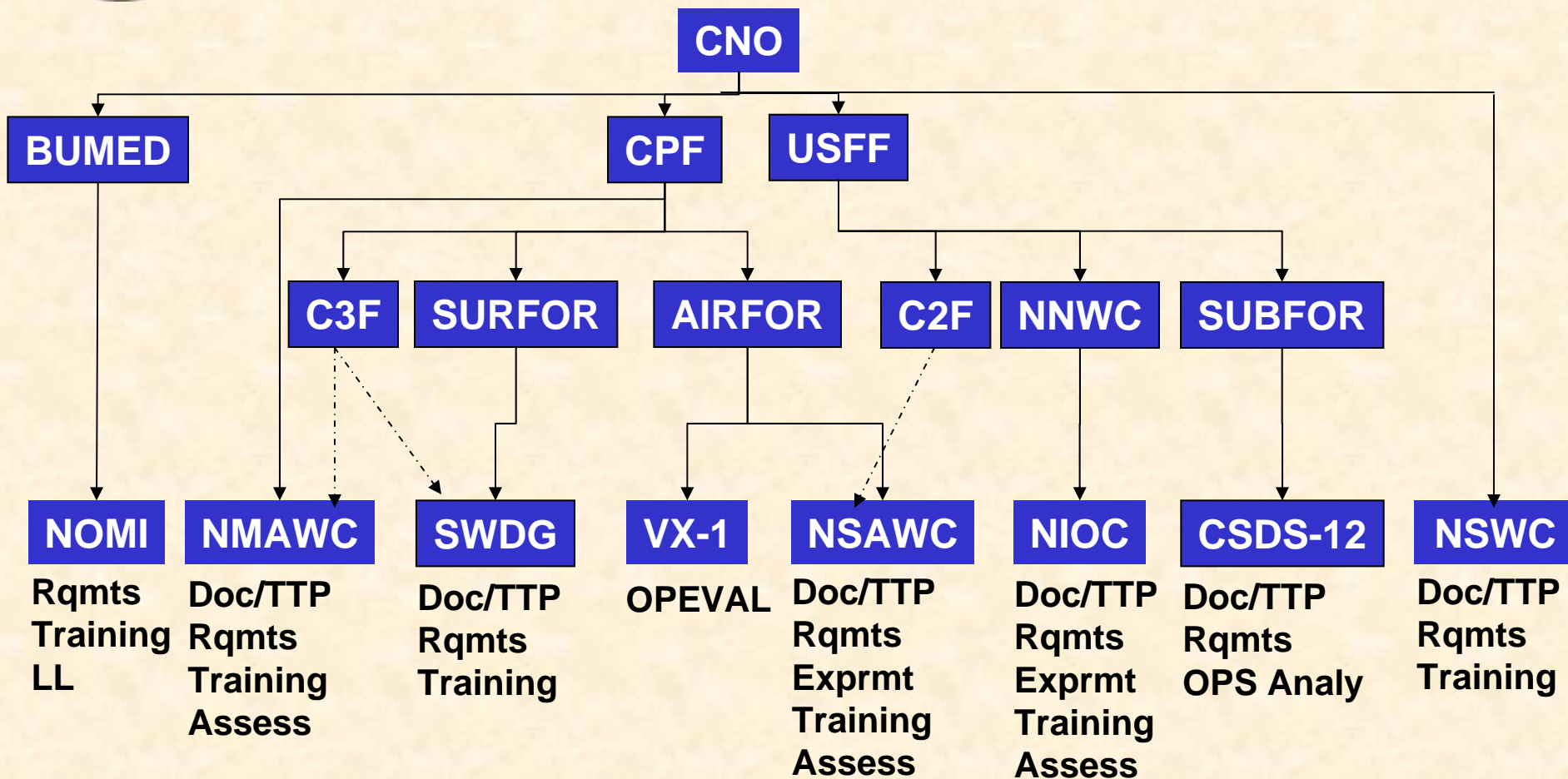
Problem Definition

- *Current readiness assessment doesn't sufficiently portray the combat readiness of fleet forces to conduct warfare missions.*
- *Current WCOEs are not empowered nor credentialed to deliver an end-to-end assessment of critical warfare areas.*



EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC

Current WCOE Structure



Disparate Alignment, Focus and Output



WCOE Responsibilities

Missions

- **Articulate Requirements**
- **Develop Doctrine/TTP**
- **Conduct Training**
- **Conduct Readiness Assessment**
- **Develop Mission Area Concepts**

Functions

- **Gap Analysis**
- **S & T Recom**
- **Author CONOPS to Doctrine**
- **Develop entire training continuum**
- **Conduct Integrated Trng**
- **Assess Fleet Units**
- **Observe Exercises**
- **Analyze Operations**

Tasks

- **OPLAN/CONPLAN**
IPCL/ NCDP/ ICD-CDD
- **FNC, Sea Trial, JCTD**
- **CONOPS, Tac D&E, CONOPS Validation**
- **Individual (A, C-School)**
Unit level & Integrated
- **Joint/Combined**
- **OPLAN/CONPLAN specific**
- **DRRS-N/SORTS, Lessons Learned, Post-Deployment CNA Studies**



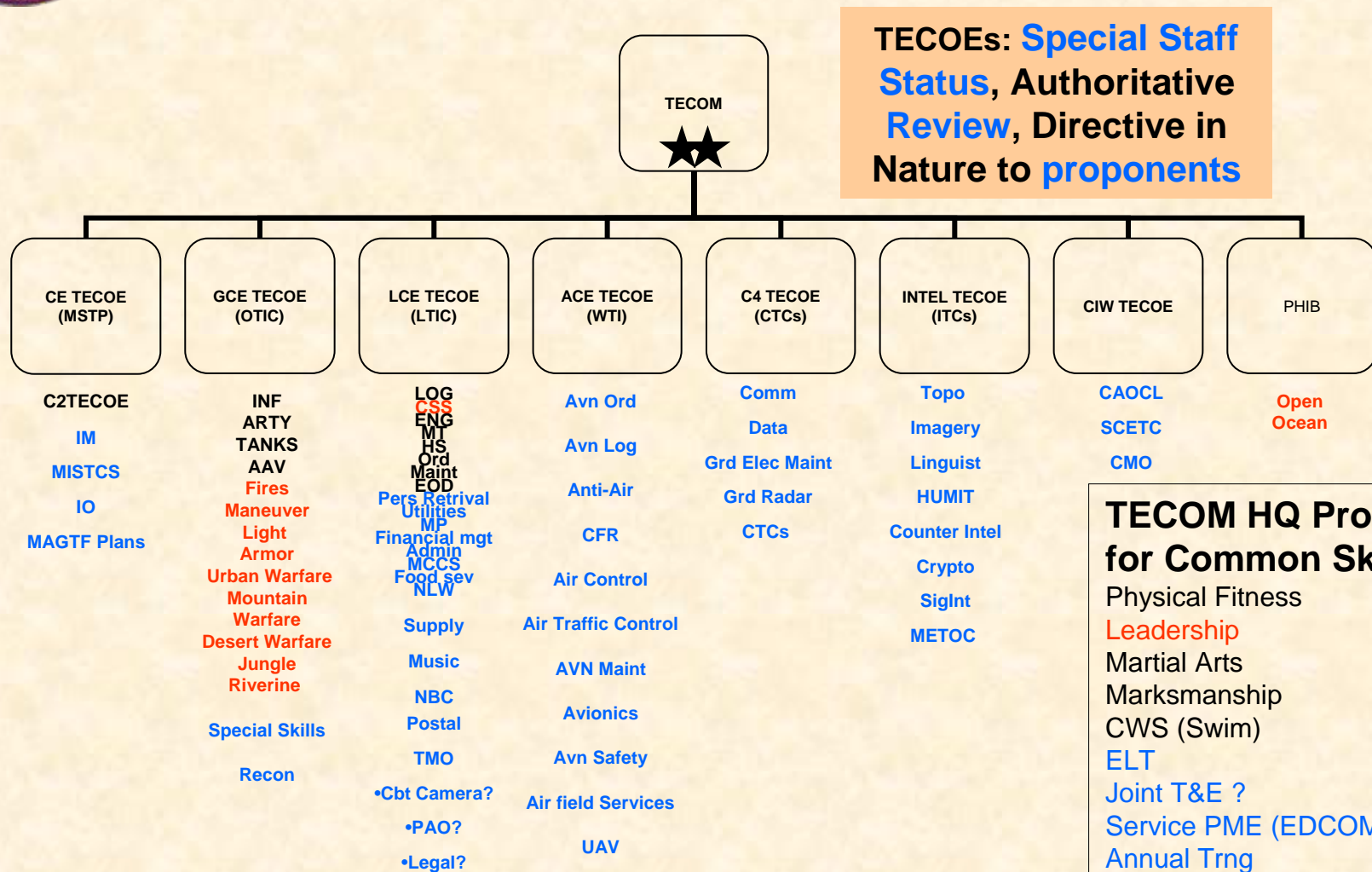
Proposed TECOE Mission

- Develop the T & E continuum for cognizant MAGTF Element / OCCFld to support Advocate & OPFOR reqs.
- Review and validate T & R Manuals / ITS
- Review and validate all T&E curricula (POIs)
- Assign AO's to participate in MCWL/Joint experimentation
- Assign AO's ISO acquisition programs
- Serve as TECOM representation and at appropriate Advocate Forums
- Support Development and review of Doctrine & TTPs

Proposed TECOE TASKS



Functional TECOE (Proponents)



TECOM HQ Proponent for Common Skills

- Physical Fitness
- Leadership
- Martial Arts
- Marksmanship
- CWS (Swim)
- ELT
- Joint T&E ?
- Service PME (EDCOM)
- Annual Trng
- Grd Safety
- Trng /T-3S

❑ =TECOEs in Campaign Plan/Frago

“ The Long War—Strategy to Hardware”

A Presentation for the Expeditionary Warfare Conference

22 October 2008

Michael McDevitt
Vice President and Director
CNA Strategic Studies

What is the long war?

- A grim reality
- Prolonged, world-wide *irregular campaign*
- A long term effort against terrorist networks and other extremists
- A struggle between violent extremism and moderation
- Direct military force is required, but we cannot kill or capture our way to victory
- A patient accumulation of quiet successes over a long time

US Defense Strategy

- Defining principle of US Defense Strategy is **balance**
 - Not the same as treating all challenges equally
 - Means setting priorities
 - Cannot expect to eliminate risk by bigger budgets
- Unlikely to repeat another Iraq or Afghanistan any time soon
 - That is: forced regime change and nation building under fire
- Strategy is use indirect approach when possible
 - Capacity building

Balance What?

- Prevailing in wars we have while preparing for future contingencies
 - Next-war-itis versus today's fights
- Institutionalizing counter insurgency, stability and capacity building while maintaining our traditional edge against other militaries
 - Don't treat these capabilities as exotic distractions
- Retaining traditional service expertise while being open to change in order to accomplish today's missions
 - Like it or not the new American way of war will include irregular war

The Obligations We Have Today

- Iraq will not simply “go away” with new administration
 - Success so far remains fragile
 - Some element of U.S. military power will continue to be involved
- Success in Afghanistan will be a focus for new administration
 - Shift in focus for USMC
- Deterrence of Iran, China over Taiwan, and North Korea
- Hunting down terrorists
- Support for Israel, plus other treaty obligations
- The Caribbean basin
 - Uncertain Cuban future
 - Weak governments, failed states, drugs, illegal immigration
 - Assisting Colombia

Open Security Questions—Neither Obligations Nor Trends

- Security implications of financial crisis
 - Credibility of US leadership
 - Willingness of US act
 - Ability of US to act
- What about Russia?
- Will a major ally or friend collapse (Pakistan, Saudi Arabia)?
- Will preserving access to West African oil (Gulf of Guinea) generate a new presence requirement?

Trends--Translation of China's Economic Strength into Global Influence

- Broader trend than military modernization
 - Global economic interests = global political interests
- But military modernization creates requirement for **capability competition**
 - US credibility in East Asia at stake
 - Access versus anti-access
 - Finger still on the trigger vis-à-vis Taiwan
- Attractiveness of “China Model” to authoritarians
 - Generates political systems competition
- *Ambition to field premier military force in Asia*
 - Not trying to pick a fight with Washington, but Taiwan remains a serious issue
 - Worries our allies

Trends--Demography and Anti-Americanism in Muslim World

- Youth Bulge Phenomena
 - When 30 to 40% of a nations males are in “fighting age” cohorts
 - Iraq, Afghanistan, Pakistan, Gaza, Yemen
- Demographic “armament”
 - Second, third, or fourth sons generate huge recruitment pools
 - Asymmetric advantage
- Public Opinion (predominately Muslim countries)
 - 15% favorable
 - 75% unfavorable
- Growing pool of Jihadist recruits
 - Many nations where cells can hide and survive
 - Limits range of political options available to friendly Islamic states

Trends--Enrichment of Energy Producing States that have anti-American Grievances

- Petrodollar surge in Iran, Russia and Venezuela
- Russia a longer term concern
 - Ability to revitalize conventional forces thanks to “warm” industrial base
 - Wealth underwrites restoring national pride
- Iran’s wealth offsets its “demographic” disarmament
 - Engaging in proxy wars—Hezbollah and Hamas
 - Funding not an issue for nuclear weapons ambitions
 - Can support substantial anti-US insurgency in Iraq and Afghanistan
- Is Chavez a threat to long term stability?

Intersection between hostile states with money and terrorist organizations, a special concern

Trend--An Incomplete Proliferation Agenda

- Short of regime change “counter-proliferation” not a credible policy
 - Determined leaders will develop bombs
 - India, Pakistan, North Korea and probably Iran
 - Perception that Iraq and Afghanistan have removed regime change from “US table”
- Can deter use by regimes, but can we deter transfer?
- The most serious future problem is transfer to non-state actors

Need explicit, credible policy that deters transfer to, and use by non-state actors

Trend--Global Climate Change

- Move beyond skeptics and believers debate
- Must consider as low-probability/high consequences
- Some effects of GCC are likely to be permanent and be very bad for some regions
 - Life and death situations
 - Adapt or migrate
- Developing nations least able to cope
- Implications:
 - Next administration will inject a sense of urgency
 - Expeditionary role in HA/DR will grow
 - Arctic Northwest passage

Threat Multiplier for Some of Most Unstable Regions in the World

What Does This All Mean?

- If forcible regime change off the table; and responding to aggression is low probability, accepting risk by not growing high end forces a likelihood
 - “Holding our own” more likely
 - Afloat missile defense a probable exception
- Ability to redirect most of these trends is remote
 - Coping rather than shaping the order of the day
- Speaking softly, and carrying a big stick is an effective coping mechanism
 - Peacetime expeditionary operations will remain in demand
 - Peacetime forward presence enables “coping”
 - Presence also enables Maritime Security Operations
- High demand for U.S. engagement, capacity building, irregular forces, and deployable naval power projection for deterrence and alliance credibility

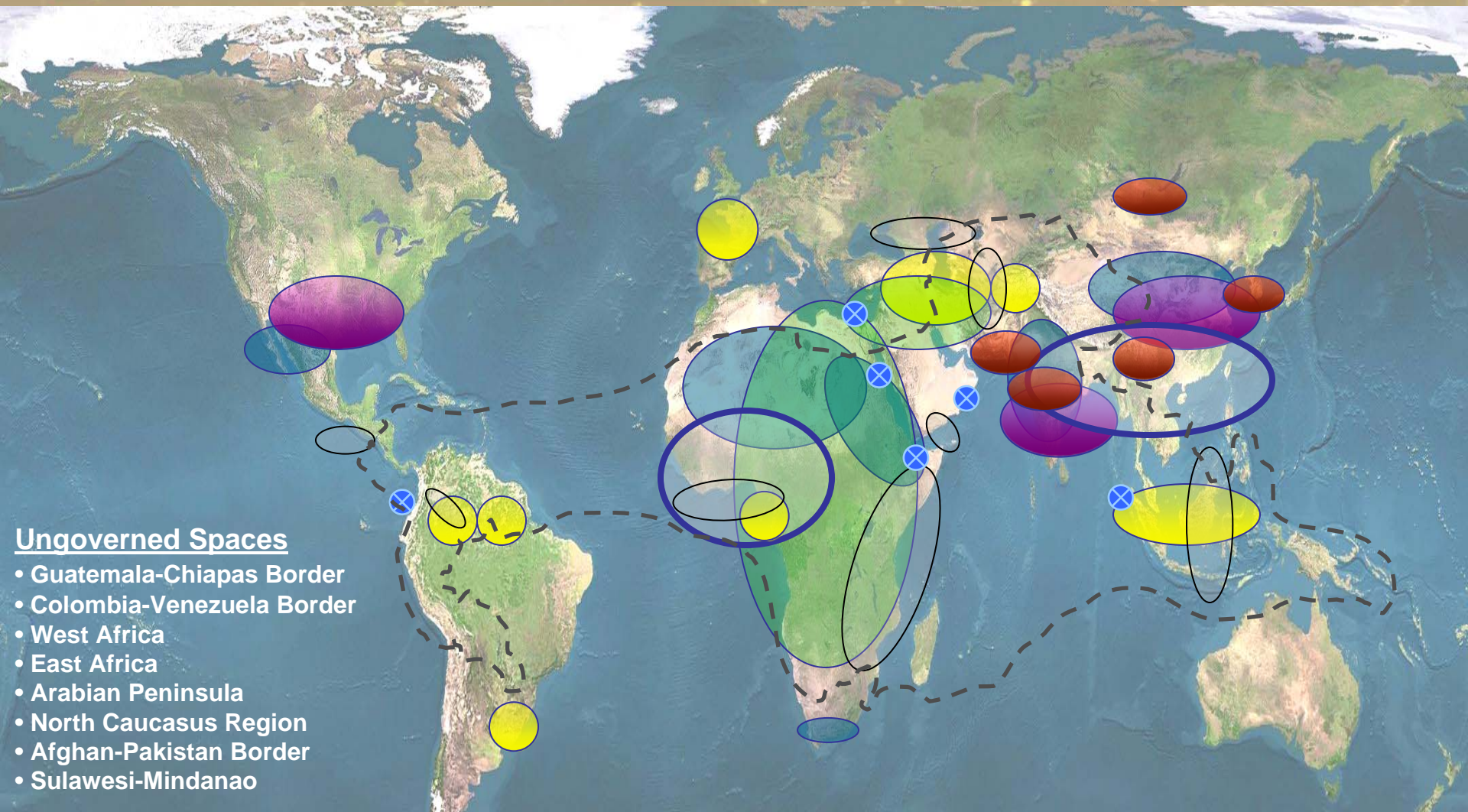
13th Annual Expeditionary Warfare Conference

"The Long War-Strategy to Hardware"

Mr. George W. Solhan
*Deputy Chief of Naval Research
Expeditionary Maneuver Warfare
And Combating Terrorism
S & T Department (ONR 30)*



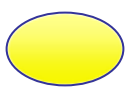
Sources of Stress, Instability & Conflict



Urban Stress



Youth Bulge



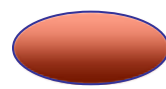
Terrorism/Crime



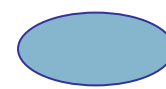
Ungoverned



Energy Demand



Nuclear

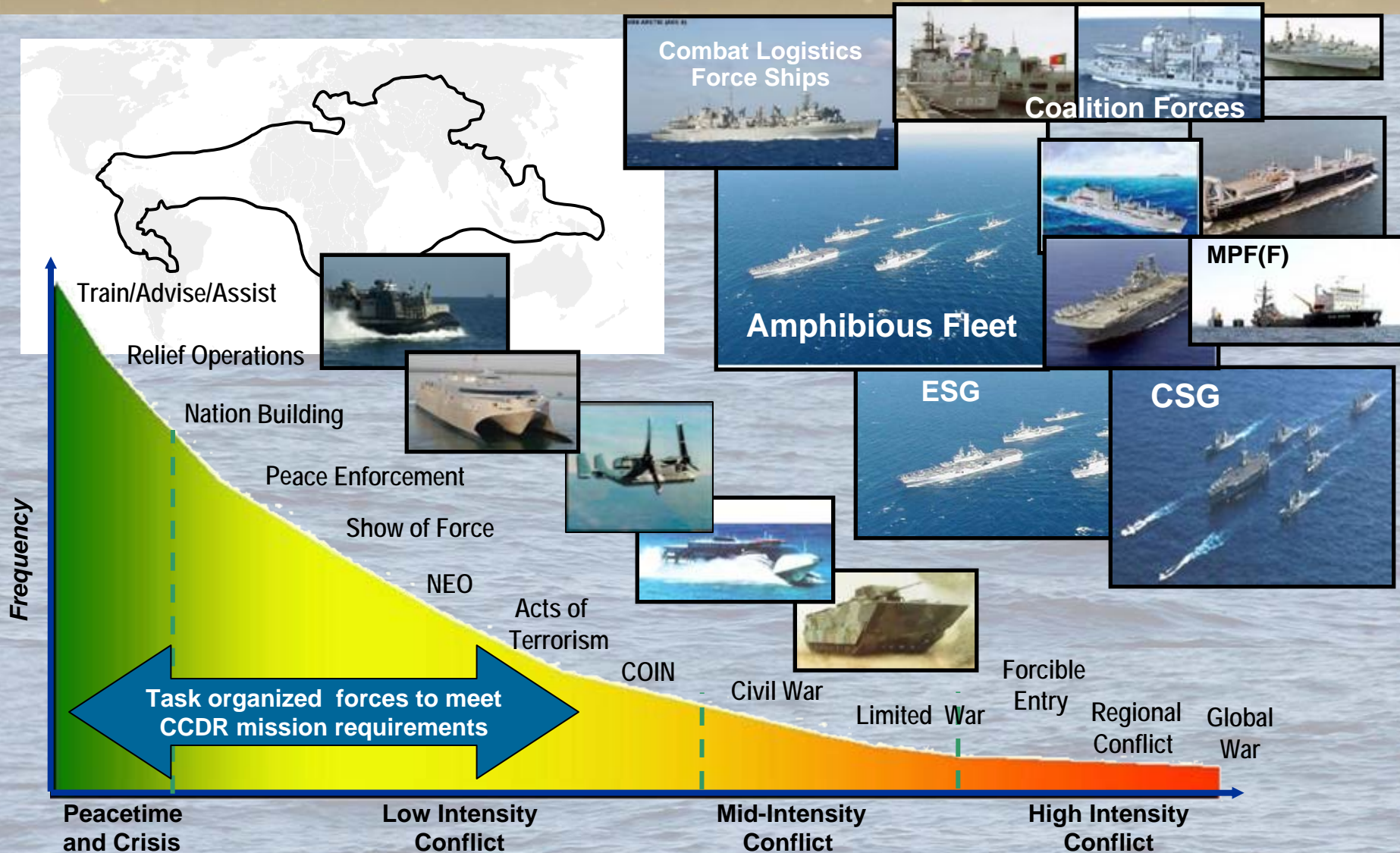


Water Stress



Choke points

Naval Expeditionary Operations

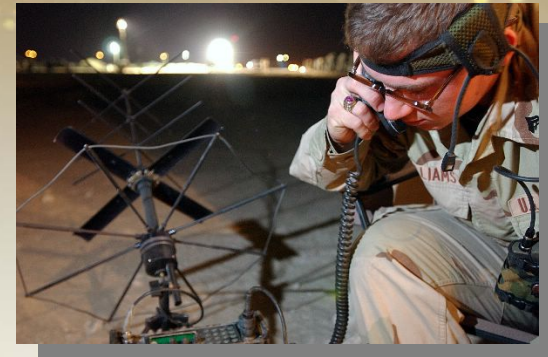


Technological Dominance



Laser-Guided Munitions

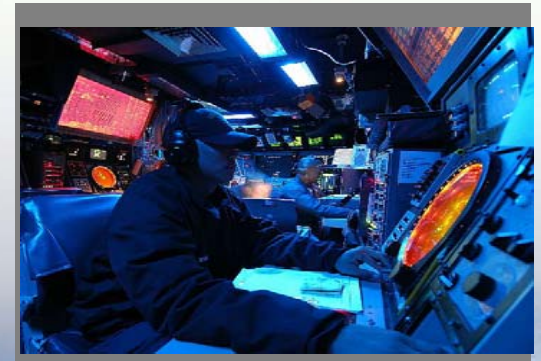
Today, Marines and Sailors have at their disposal the world's most sophisticated military technology



Mobile Communications



GPS Navigation and Targeting



Network-Centricity, Information Warfare, and Intelligence

Technological “Democratization”

In the global war on terror and in Iraq and Afghanistan, our adversaries are leveraging sophisticated technology that is now easily available anywhere in the world—and at a modest cost.



**Internet—
Information Warfare
and Intelligence**



**Commercial Laser
Rangefinder—Precise
Targeting**



**Cell Phones—
Mobile Comms**



**Handheld GPS—
Location with
Extreme Accuracy**

A Technological “Perfect Storm”?

For decades, Western militaries have held a decisive technological advantage...



“It is by devising new weapons, and above all by scientific leadership, that we shall best cope with the enemy’s superior strength.”

--Winston Churchill

Today, enemies are able to acquire weapons and technology quickly and cheaply...



“Acquiring weapons for the defense of Muslims is a religious duty. If I have indeed acquired these weapons, then I thank God for enabling me to do so. And if I seek to acquire these weapons, I am carrying out a duty. It would be a sin for Muslims not to try to possess the weapons that would prevent the infidels from inflicting harm on Muslims.”

--Osama bin Laden

And there also are adversaries willing to invest significantly in new technology

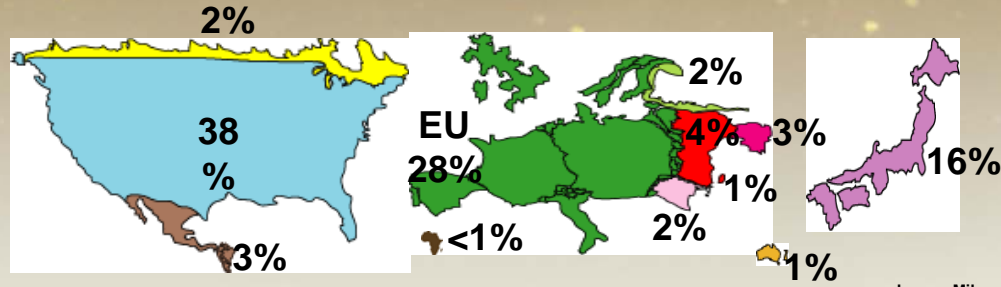


The 21st Century is also going to be an age of scientific change, with certain cutting-edge technologies likely to be applied to naval warfare...high-tech arms will make direct attacks on naval battlefields possible from outer space, remote altitudes and remote land bases...superconduction technology will bring superconductor ships to the naval order of battle, enabling ships to travel faster without noise...submarines will be able to go faster and deeper, with the seabed being the ideal place to build military bases.”

--Chinese Naval Officers at the Navy Research Institute in Beijing

World Science and Technology Investment

1996*



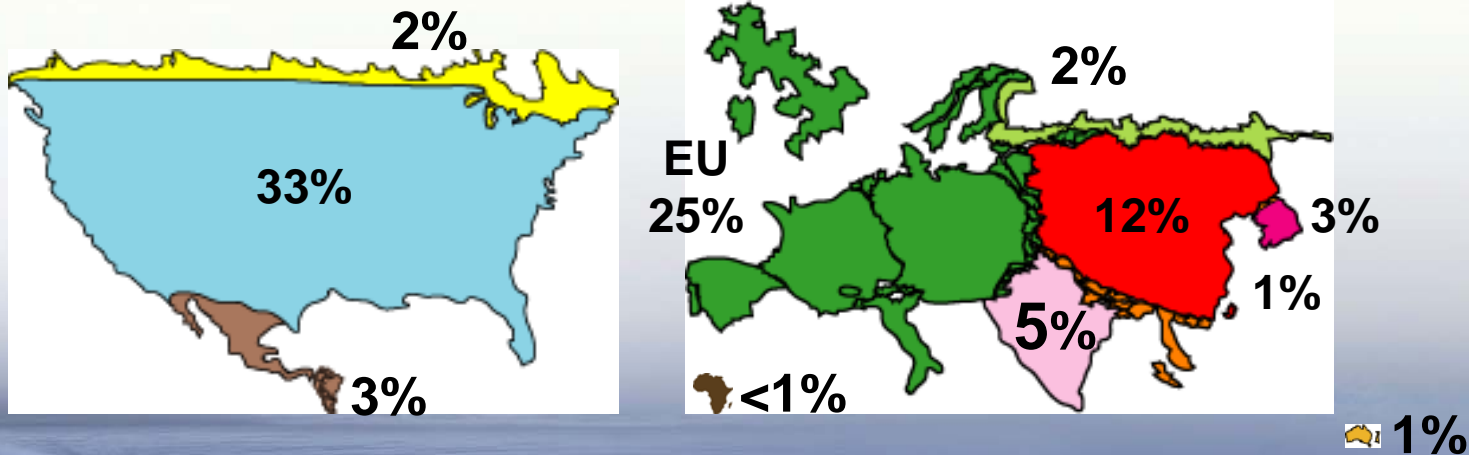
* UIS S&T database; World Bank - PPP data

Lyons, Mikami 2005, AOARD

Asia Share
 1996: 26%
 2004: 35%

+78%

2004**

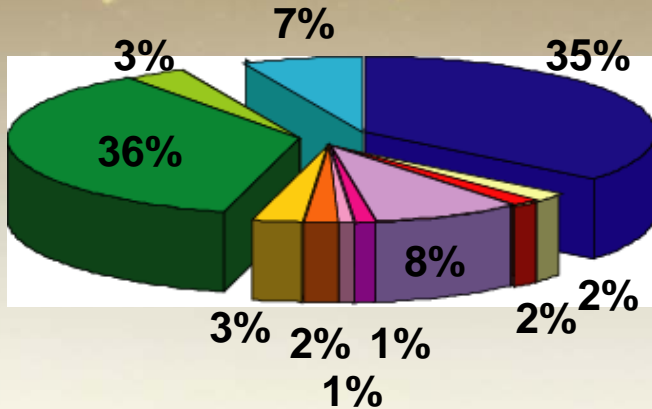


Lyons, Mikami 2006, AOARD

** OECD 2005 PPP; Global S&T Report (Batelle) - PPP data

World Science and Technology Publications

1996



Asia Share

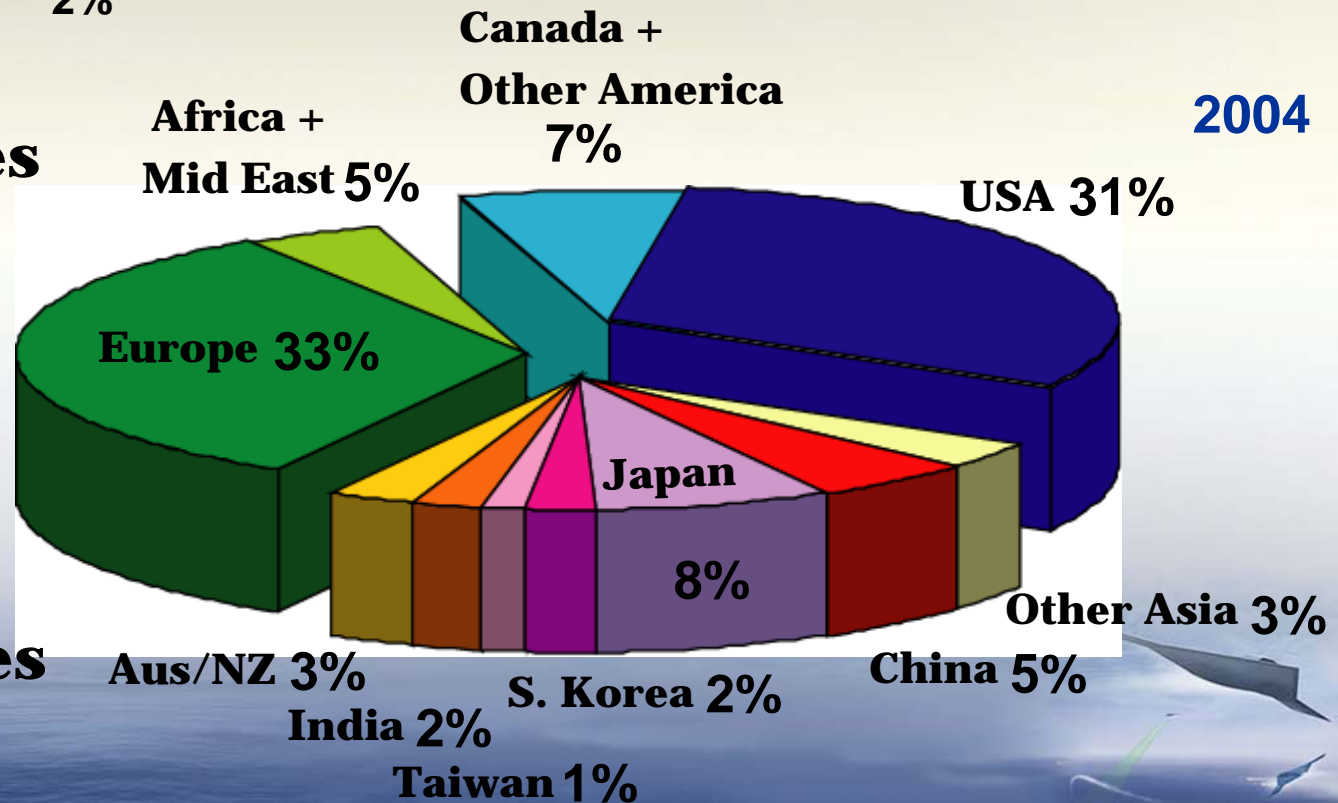
1996: 19%

2004: 24%

851,764 articles

+28%

2004



1,094,017 articles

A Swiftly Changing Planet

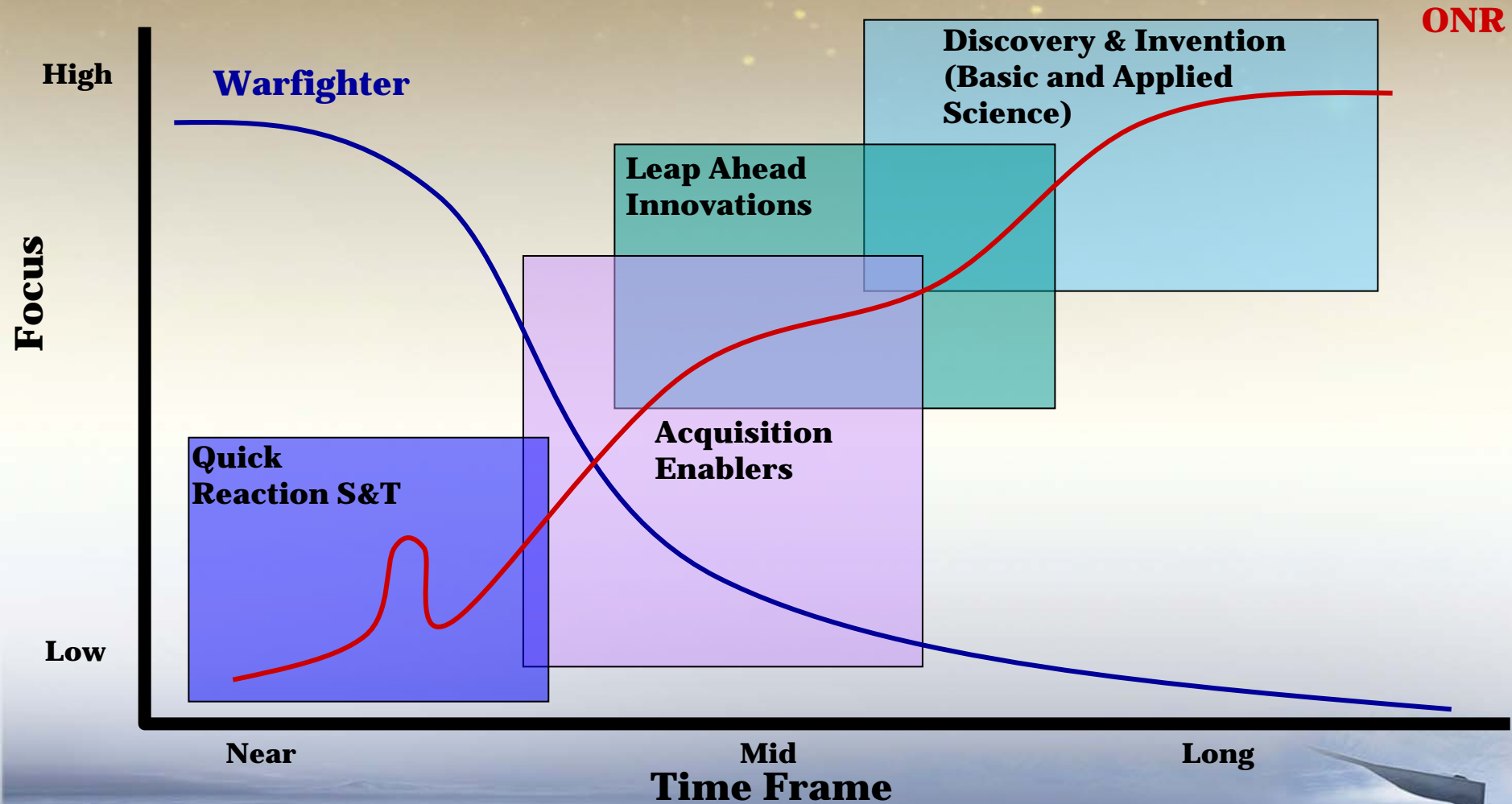


- In an era of increasing globalization, new technology is more readily available—and more quickly—than ever before
- The natures of “combatant” and “weapon” are changing, and new challenges can come from anywhere in the world

- We must accept the fact that adversaries will use our technology against us
- To stay competitive on tomorrow’s battlefields, we must:
 - **Ensure** our people and research enterprises are more innovative
 - **Maintain** our technological advantage



S&T Focus to Meet Naval Needs



Dominating the Battle in the Littorals

ONR Technology will enable Sailors and Marines to:




- Survive and Win
- be more lethal
- expand their area of influence
- be flexible in all phases of warfare
- move between kinetic and non-kinetic tactics
- predict actions of Irregular enemies
- generate combat power operationally/tactically
- Operational Adaptation in new paradigm of Hybrid Complex Warfare



Dominating the Battle in the Littorals

Programs featured in this theme include:

- Intelligence, Surveillance, and Reconnaissance
- Naval Expeditionary Overwatch
- Suicide Bomber Detection
- Maneuver
- Force Protection
- Squad Personal Power
- Seabasing
- Lightweight Materials
- Air Vehicle Deep Sustainment\
- Counter-IED Research
- Conformal Antennas
- Non-lethal Weapons—Active Denial System



I will provide more detailed information as we move forward

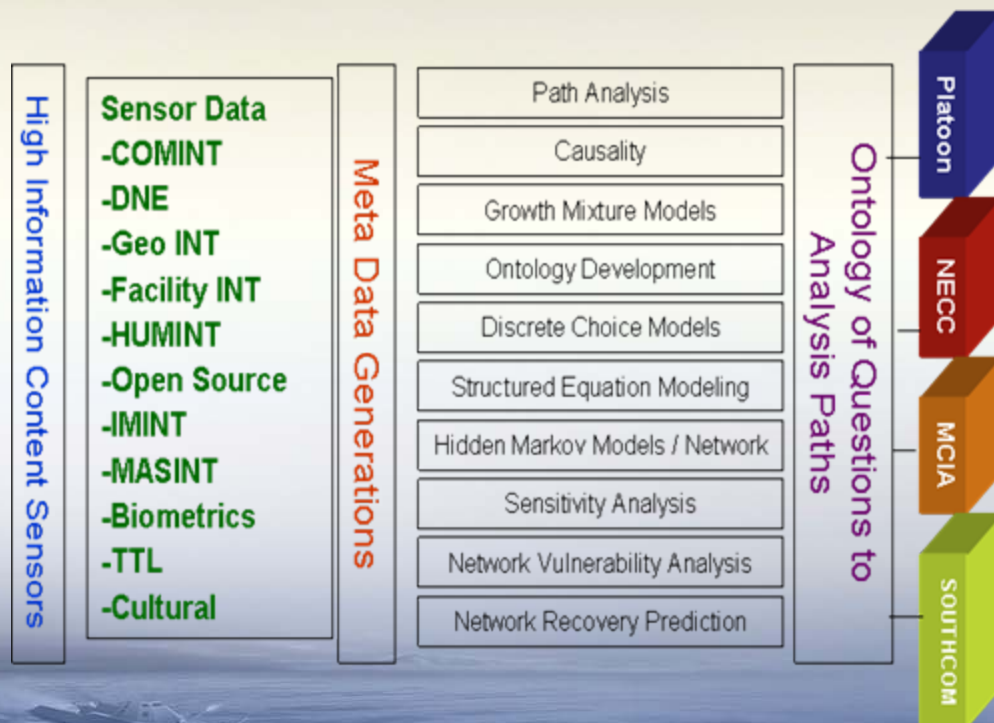
Intelligence, Surveillance and Reconnaissance (ISR)

Vision

Develop and leverage advanced technologies for applications in future intelligence, surveillance, and reconnaissance systems. Enhance situational awareness to enable real time tactical decision making for Distributed Operations and provide proactive and predictive capabilities for Asymmetric and Irregular Warfare.

Key Research/Technology Investment Areas

- **Sensor Fields**
 - Unique Materials for Advanced Sensors
 - Sensors for Entity Recognition
 - Sensors for the Urban Domain
 - Sensor Network
 - Sensor Comm
- **Relevant and Situational Information on Demand**
 - Tag, Track, Locate
 - Multi-Modal Sensor Fusion and Networking
- **Actionable Intelligence for Expeditionary and Irregular Warfare**
 - Warfighter Interface and Decision Tools
 - Threat Prediction Models

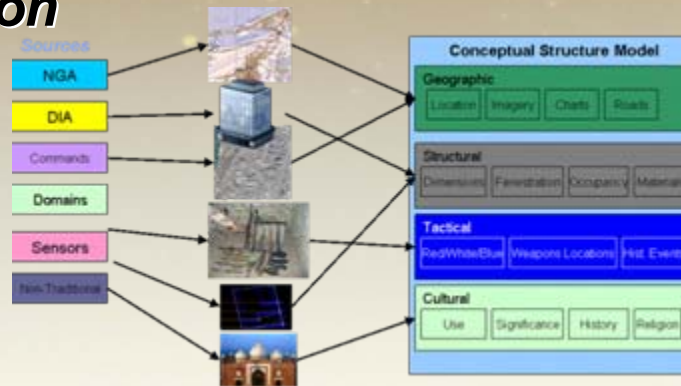


Urban Situational Awareness

ONR through-wall sensing technology will provide vital decision-making information

ONR Program:

- Urban Situational Awareness**



Program Officer



Martin Kruger

1. ONR research provides enhanced sensing for Urban environments

- ONR is Developing “through-wall” sensing
- ONR research is focusing on improving multi-path imaging
- Developing enhanced sensors and inference engines

2. Collaborating with Army and DARPA

- Program development began in 2007
- Investing in signal processing algorithms
- Very narrow broadband radar is a focus area

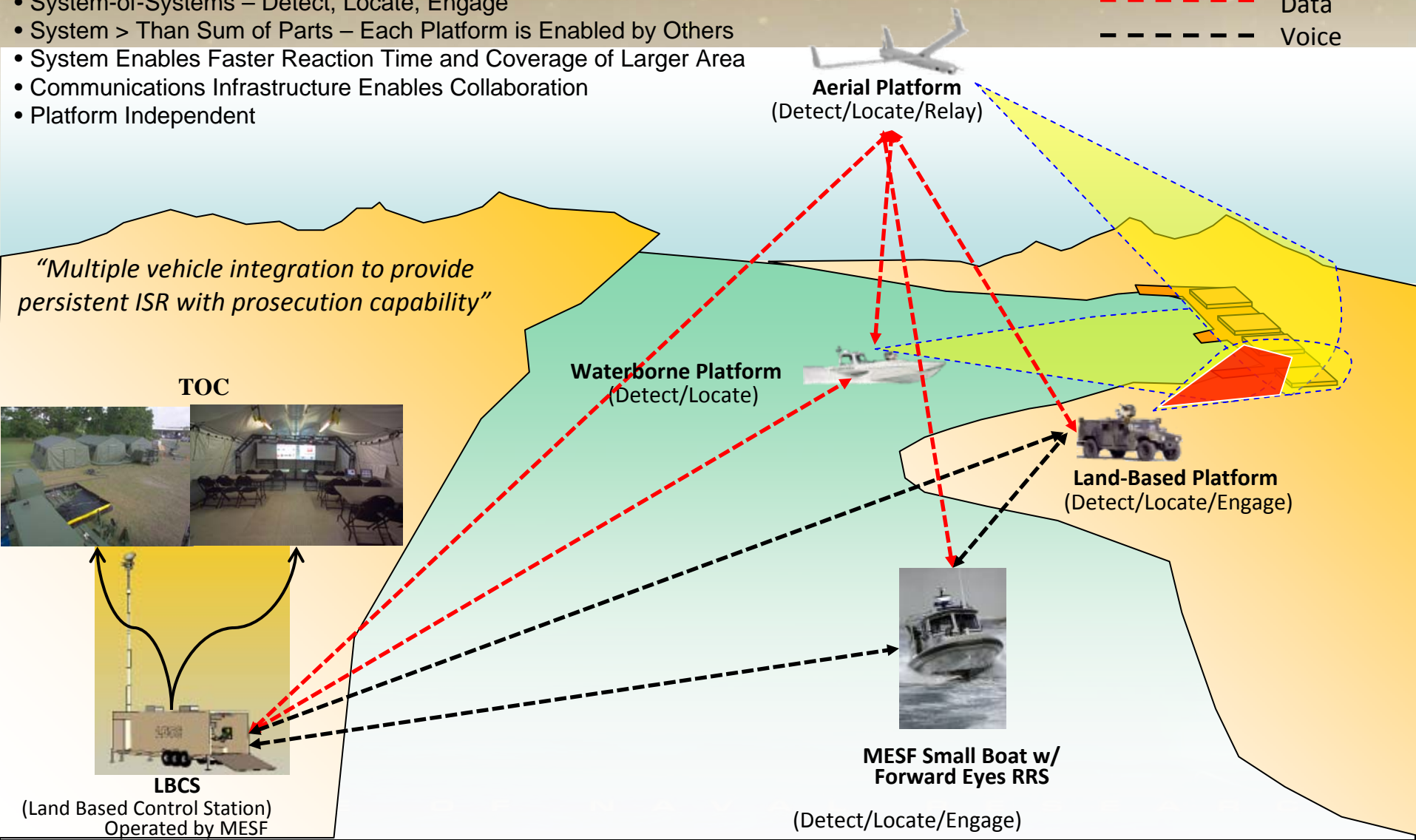
3. Research Challenges

- 1) Need for radar signal processing algorithms
- 2) Increased standoff range of through-wall sensors
- 3) Need for suitable inference engines

Navy Expeditionary Overwatch (NEO) Operational View

- System-of-Systems – Detect, Locate, Engage
- System > Than Sum of Parts – Each Platform is Enabled by Others
- System Enables Faster Reaction Time and Coverage of Larger Area
- Communications Infrastructure Enables Collaboration
- Platform Independent

--- Data
--- Voice



Navy Expeditionary Overwatch (NEO) Operational View

ONR technology will enable vital decision-making information and tools

ONR Program:

- **Naval Expeditionary Overwatch (NEO)**



Program Officer



Nelson Mills

1. **ONR technology enables Navy expeditionary unit distributed operations**
 - Responds to NECC, SOF, and USMC requirements
 - Developing communication network
 - Provides multi-sensor platform control station
2. **ONR technology integrates Radar, IR, FLIR and EO for expeditionary units**
 - Integrates manned and unmanned sensors
 - Integrates both lethal and non-lethal engagement systems
 - Integrate USV, Scan Eagle UAV, and HMMWV platforms

3. **Research Challenges**

- 1) Safe and Legal Engagement Systems for UXV's
- 2) On-Board Data Processing
- 3) Cooperative Perception and Communication for UXV's

Force Protection



Vision

To allow the force to maintain operational tempo at the small unit (battalion and below) and individual Warfighter levels, the Thrust will provide technology that protects from a myriad of modes of enemy attack throughout the spectrum of warfare. Each system will be expeditionary in nature, lightweight, and capable of providing a far greater degree of protection than any comparable system currently available.

Key Research/Technology Investment Areas

- **Detection**
 - Multi-modality signature detection (THz, spectroscopy, gas chromium, RADAR)
 - Optics/void detection
 - Subsurface explosive hazard detection
 - Directed Energy
 - Confirmation through spectral signatures
- **Neutralization**
 - Explosive neutralization independent of trigger mechanism
 - Magnetic/Acoustic/Seismic signatures
 - Directed Energy
- **Mitigation**
 - Advanced materials
 - Bio-effects modeling and simulation
 - Fiber-level modeling
 - Modular design tools

Suicide Bomber Detection

ONR technology will provide real-time decision-making information

ONR Program:

- **Suicide Bomber Detection**



Program Officer



Lee Mastroianni

1. Bomb detection research is being applied to the suicide bomber threat

- Imaging sensors and spectroscopy
- Data fusion architecture to reduce Pfa and increase Pd
- Behavior detection and intelligent video

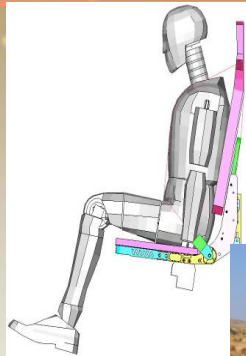
2. Suicide bomber detection draws upon a variety of technologies

- Passive and active NIR, MWIR, and LWIR imaging, mmW and THz imaging (2D RADAR), mmW and THz imaging (3D RADAR), LIBS and Raman Spectroscopy
- Characterization of clutter and algorithm development
- Fusion efforts in ISR realm
- Personnel and crowd tracking algorithms

3. Research Challenges

- 1) Detection at Operationally Relevant Ranges: Significant standoff is required in order to reduce exposure
- 2) Clutter/False Alarms: Automatic differentiation of potential items of interest carried on body
- 3) Data/Sensor Fusion: Combination, alignment, and analysis of data from multiple modalities
- 4) Crowd Surveillance: Investigation of moving individuals within a larger crowd

Maneuver



Vision:

Marine forces of the future will be significantly more agile, lethal, mobile and survivable. Technologies will be developed to increase the warfighting capabilities and effectiveness of the Marine Corps Air Ground Task Force (MAGTF) with emphasis on improving survivability, providing enhanced maneuver, and providing maneuver enabler systems in Distributed Operations and Asymmetric / Irregular Warfare.

Key Research / Technology Investment Areas

Survivability:

- Enhanced materials for armor and vehicle structures
- Active and dynamic protection systems
- Shock mitigating seats & attenuation technologies for crew protection

Advanced Mobility:

- Advanced suspension systems for enhanced off road mobility
- On board vehicle power generation and highly efficient power train components

Maneuver Enablers:

- Situational awareness decision aids and planning tools
- Unmanned and autonomous vehicle systems

Combat Tactical Vehicle

ONR is developing affordable, cutting edge, future light armored vehicles

Program Officer

ONR Program:

- **Combat Tactical Vehicle**



Jeff Bradel

1. **CTV brings light vehicle armored technology into the 21st Century**
 - Six-passenger combat variant of the Joint Light Tactical Vehicle family of vehicles
 - Configurable for various missions with crew-served weapon station, sensors, & comm suite
 - Payload of up to 6,000 pounds
2. **CTV's aluminum armor-based hull design protects against IEDs**
 - Applique armor provides additional protection against kinetic energy and shaped-charge rounds
 - Demonstrates art of the possible for next generation of inherently protected land transport

3. **Research Challenges**

- 1) Development of a tactical wheeled vehicle with increased survivability
- 2) Integration of an advanced suspension with ride height adjustment
- 3) Integration of armor structure as vehicle structure
- 4) Development & integration of high mass efficiency and active armors

Logistics



Vision:

Marines of the future will benefit from a precisely tailored level of logistic sustainment from seabased platforms to rapidly maneuvering forces ashore. Logistic delivery systems of the future will be more responsive and flexible, enabling Marines to out-pace rapidly changing operational scenarios. Likewise, delivered logistic commodities will provide more operational value per unit weight, enhancing combat unit self sufficiency and maneuverability. Finally, operational units will benefit from technologies that maximize equipment readiness by minimizing both down-time and maintenance requirements.

Key Research Topics

Asset Visibility

- Low-power high-clutter RF propagation (for wireless sensors and RFID tags)

Logistic Transport

- Structural composite mechanics and fabrication (for modular lightweight bridges)
- Ergonomics (for human load transport)
- Aeromechanics (for autonomous aerial logistic delivery)

Operational Sustainment

- Raman Spectroscopy
- Membrane transport and filtration for water purification
- Solid Oxide fuel cell electrochemistry, thermoelectric materials, electrochemical capacitors and metal-air batteries
- Casualty stabilization and life support automation

Maintenance Reduction

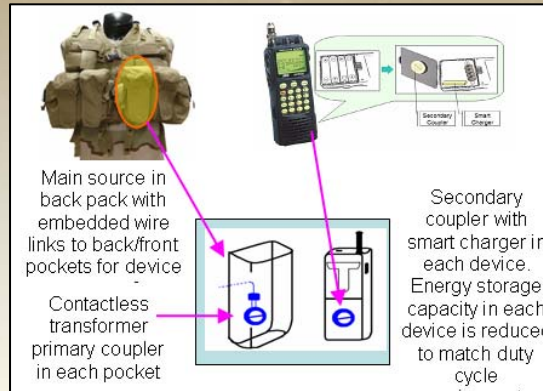
- Materials science for prevention of corrosion and wear

Squad Portable Power

Squad Portable Power will enable small combat units to optimize portable energy sources

ONR Program:

- **Squad Portable Power**



Program Officer



Cliff Anderson

1. **Squad Power Network will exploit wearable power systems**

- ONR is improving the portability of electronic devices for Marines
- Optimizing the aggregate assembly of devices and power sources
- Developing small power sources and load configurations

2. **Squad Power Network will eliminate issues with incompatible batteries**

- Research will result in weight savings for portable power
- Bridge compatibility issues with legacy portable systems
- Smart Charging systems will match each device's duty cycle

3. **Research Challenges**

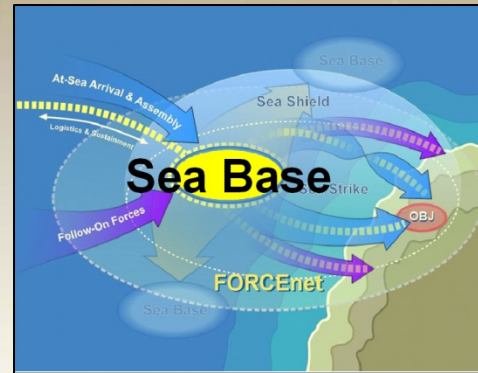
- 1) High specific energy electrochemical capacitors to function as short term energy storage
- 2) Intelligent small scale voltage conversion and power distribution networks
- 3) Robust energy coupling approaches that facilitate ease of momentarily disconnecting devices

Seabasing Logistics

ONR Seabasing technology overcomes limitations of geographic shore bases support

ONR Program:

- Seabasing Logistics**



Program Officer



Dr. Geoff Main

1. Seabasing logistics supports a completely new concept of forward presence

- Enables improved ship-to-ship logistics
- Improves sustainment of assembled Naval forces
- Reduces response times to humanitarian mission requirements

2. ONR is developing flexible, responsive afloat warehousing technology

- Seabase research enables sea to shore connectors in high sea states
- Fuel transfer from sea to shore is a vital focus area
- Enables maritime operations where shore support is limited

3. Research Challenges

- 1) Ship motion prediction in high sea states for ship-to-ship transfer
- 2) Interface with and support of point-of-delivery and heavy lift aircraft
- 3) Integration of logistics systems into a COP - provide better, more flexible resupply and asset visibility

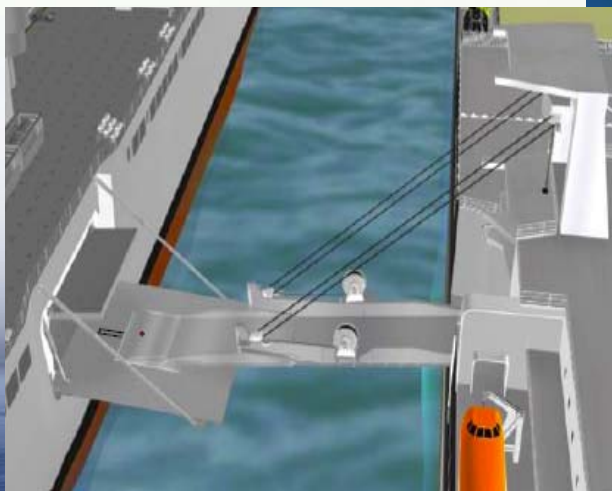
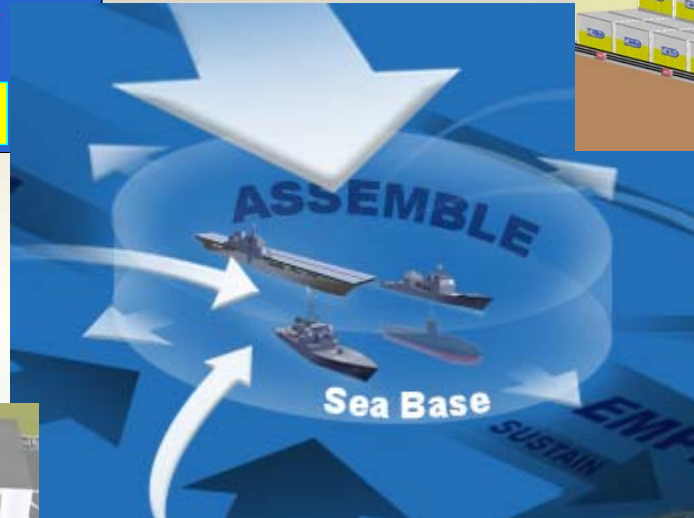
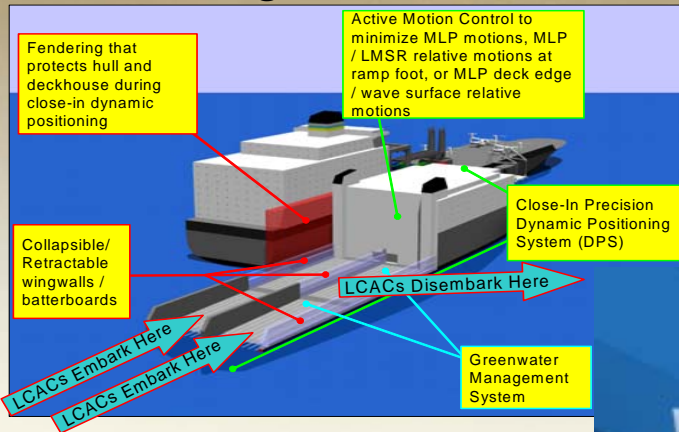


Ship-to-Ship Transfer & Material Handling

Revolutionary Research... Relevant Results

Small-to-Large Vessel at-Sea Transfer

Large Vessel Interface Crane Technology



Interface Ramp Technologies

High Rate Vertical/Horizontal Material Movement

OFFICE OF NAVAL RESEARCH

Dominating the Battle in the Littorals

Recent engagement opportunities:

- Modern Day Marine Exposition, Marine Corps Base, Quantico, VA, 30 September – 2 October 2008
- Human Social Cultural and Behavioral Sciences Workshop 8-9 Oct.
 - Dynamic Tactical Communications Network BAA 08-020 (Closed)
 - Expeditionary Maneuver Warfare Applied Research and Advanced Technology Development BAA 08-012 (Closed)

Future engagement opportunities:

- ONR Long Range BAA 09-001. (Annual FY opportunity)
- NEO VIP Demonstration Day 14 Nov 08.

Program Officers Contact Info

Name	Program	ONR Code	
Mr. Cliff Anderson	Exp Logistics	Code 30	
Mr. Jeff Bradel	Maneuver (CTV)	Code 30	
Mr. Martin Kruger	ISR – Urban SA	Code 30	
Mr. Lee Mastroianni	Force Protection	Code 30	
Mr. John Moniz	Exp C4	Code 30	
Mr. Nelson Mills	NEO	NSWCDD	
Mr. John Keenan	Non-Lethals	JNLWD	
Mr. Dan Simons	Firepower (Fires)	Code 30	
Dr. Roy Stripling	Human Performance, Training & Education	Code 30	
Dr. Geoff Main	Sea Basing	Code 33	
Mr. Tony Seman	Sense & Respond Logistics	Code 33	

QUESTIONS?



Operational Perspectives on Current & Future ESG Employment



Captain Gil "*Happy*" Birklund, USN

Chief of Staff
Expeditionary Strike Group Two



Contents

- Staff Structure
- Missions
- Worldwide Reach
- Past, Present & Future Employment
- Questions





Staff Structure



Deputy Commander
Col, USMC



Commander
RDML, USN



Chief of Staff
CAPT, USN

Admin
LCDR, USN

Intel
CDR, USN

FOPS/COPS
CDR, USN

Logistics
CDR, USN

Plans
LtCol, USMC

C4I
CDR, USN

USN: 54 billets

USMC: 9 billets

Coalition: 1 billet

An operational staff focused on planning and execution of expeditionary missions



Missions

■ Expeditionary Power Projection

Sea Control

Deterrence

Maritime Security

Disaster Response

Forward Presence

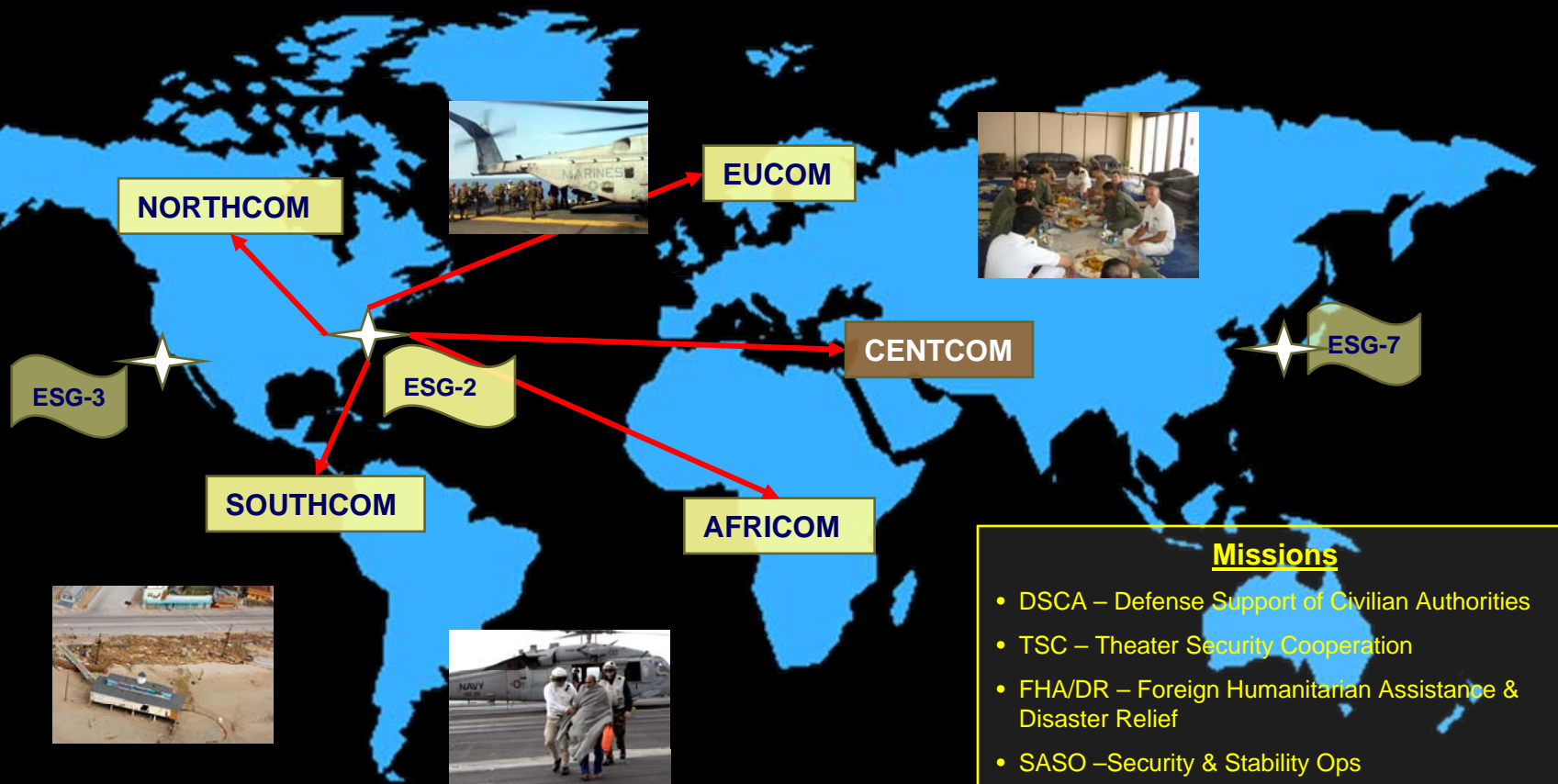
Humanitarian Assistance



Supporting the Maritime Strategy with expeditionary forces



Worldwide Reach



Scalable, Flexible, Deployable...supporting the Maritime Strategy



Past Employment

■ Pre 2006: Amphibious Group Two

■ Administrative Functions

- "Mini" Type Commander
- Larger staff ~ 120 personnel
- More administrative functions
 - i.e., Title 10



■ Operational functions

- ATF East (OIF)
- HA/DR (i.e., Katrina/Rita)



An combined administrative/operational staff supporting, deploying & leading amphibious forces



Present Employment

■ 2006 - 2008

- Transitioned to ESG
 - Flag led staff
- Staff size halved (~60 personnel)
- C5F Deployments
 - Continuation of ESG trial concept
- Advocate for amphibious forces
 - Afloat readiness
- Liaison to USMC
 - Maintain blue/green link



An operational staff deploying and leading expeditionary forces



Future Employment

- 2009 and beyond...
 - Deployable Flag-led staff
 - **TACTICAL**/operational focus
 - Supporting numbered fleet commander
 - Deploying as needed
 - Contingencies, HA/DR, NEO
 - USMC partner
 - CATF, MEBEX, etc...



ESG Way Ahead...a work in progress

Questions?



Backup



Operational Functions

- Expeditionary Strike Group Command Element
 - CTG 20.9 (OPCON of assigned amphibious forces)
 - Crisis response (NEO, HA/DR, DSCA)
 - Composite Warfare Commander
 - Core enabling element for C/JTF (C/JFMCC for exercises)
 - Amphibious Task Force Commander (CATF for MEB/MEF)
 - MEB level exercise planning
 - Expeditionary Strike Force Commander (ESF)
 - Integrate into MHQ w/MOC architecture
- Surge Capable for Navy Component Commander





Administrative Functions

- Advocate for Amphibious Warfare
 - Senior Amphibious Staff
 - Liaison to Marine Corps (II MEF & MAGTF)
 - Amphibious Operational Advisory Group
 - Afloat readiness
 - Flag level oversight of and advocacy
 - Flag liaison to Surface Type Commander

